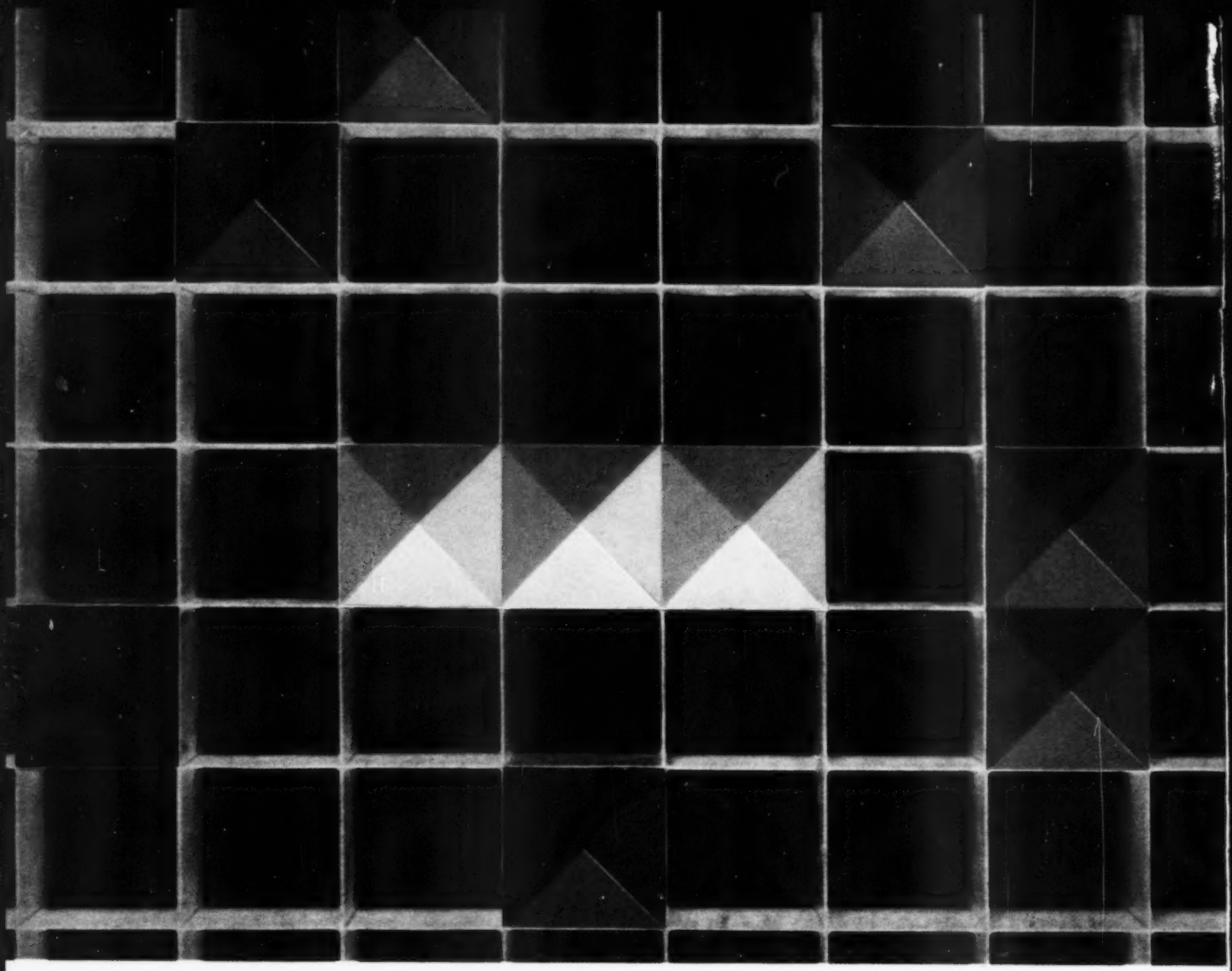
The Council of Industrial Design

April 1959 No 124 Price 3s

Design



DESIGN 2025

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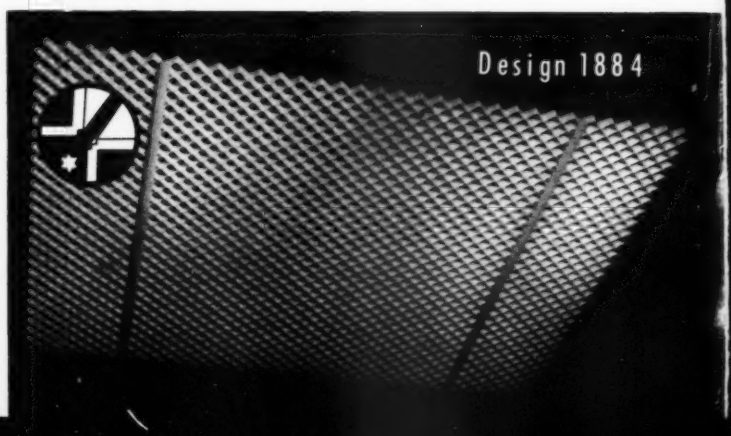
ELCOPLAS *Lighting Louvre*

Pyramids 2" × 2" are available in 5 colours for fitting into design 2025 louvres only. Any pattern may be specified for fixing before delivery, or alternatively pyramids may be supplied loose for fitting by customer.



ELCO PLASTICS LTD

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Tel.: High Wycombe 4111/2/3/4

ABCDEFGHIJKLMN
OPQRSTUVWXYZ

My Joanna type was not designed to facilitate machine punch-cutting. Not at all. Machines can do practically anything. The question isn't what they *can* do but what they *should*. It is clear that machine products are best when they

abcdefghijklmnopqrstu
vwxyz&1234567890

are plain . . . Assuming that the serif is not an ornamental but a useful addition to letters in book faces, Joanna is an attempt to design a book face free from all

ABCDEFGHIJKLM
NOPQRSTUVWXYZ

fancy business . . . I only claim that it is on the right lines for machine production – ERIC GILL. This advertisement is set in 'Monotype' Joanna, Series 478, fourteen and thirty point.

Reg. Trade Mark: MONOTYPE

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uvwxyz&1234567890

THE MONOTYPE CORPORATION LIMITED · 43 FETTER LANE · LONDON EC4

The new window technology

TURNING A WINDOW INSIDE OUT

New buildings –
New needs –
New ideas –
New windows –

Pressures on space in cities and towns; the preciousness of building sites; the greater economies in constructing larger living and working units – these are some of the potent stimuli leading to the new ideas taking shape every day on Architects' and Designers' drawing boards. They have led naturally to the development of a new window technology – bringing changed concepts of efficiency in soundproofing, and air conditioning; in weatherproofing and ease of servicing.

The Crittall 'Continental' window is in aluminium, double-glazed, completely weather-stripped, reversible and is fitted with a Crittall Solomatic Venetian Blind between the glazing. All four glass faces can be cleaned from inside the room.

Noise intake and heat loss are two of the bothers that constantly beset those who work in city offices or town blocks of flats and are, therefore, two of the practical problems which have been high on the Architect's list for more effective solution. Among the window designer's varied contributions is the Crittall 'Continental' double-glazed, reversible window. Taking full advantage of the new window technology in the use of aluminium extrusion and plastic sealing strips, this Crittall window damps down noise and reduces costly heat loss to reasonable proportions.

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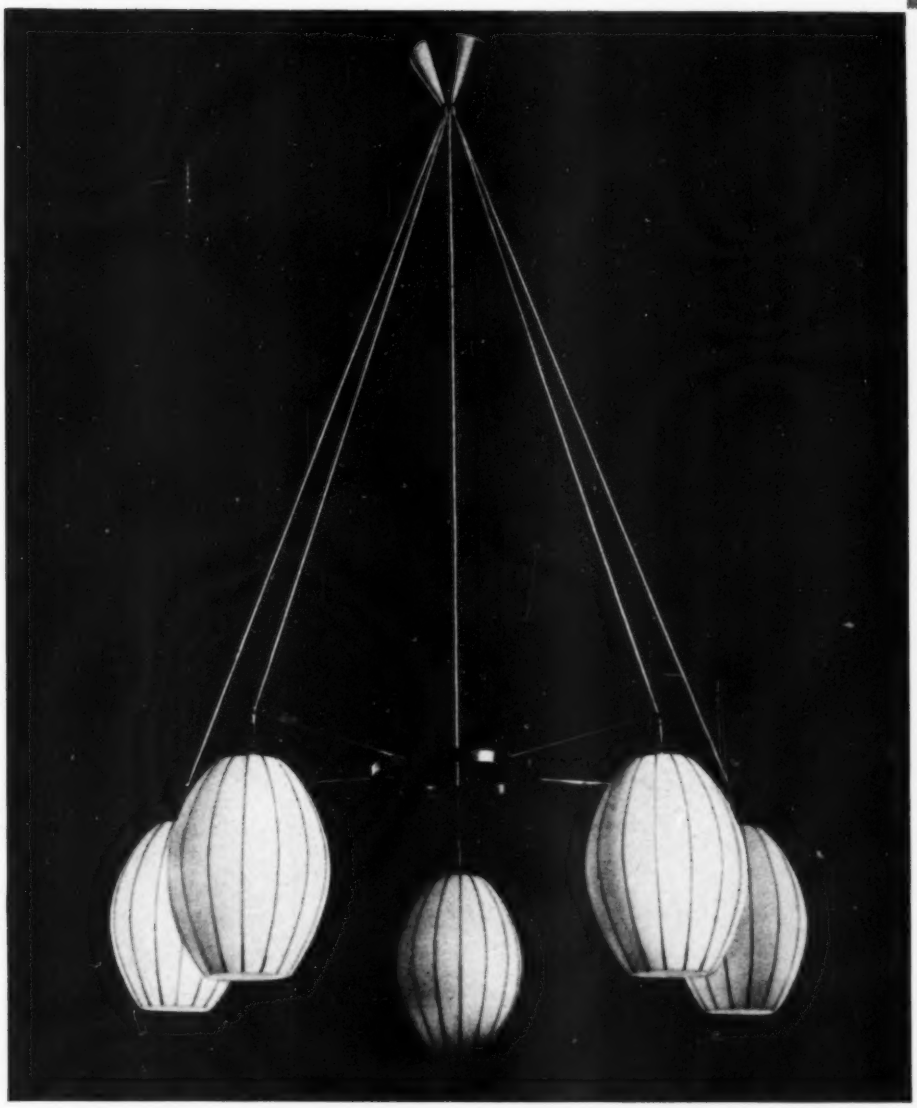
TSW/29

Venus Fittings by FALKS



Designed by
J. M. Barnicot M.S.I.A.

From the Falks range of Contemporary Lighting Fittings

Satin white opal glassware in two sizes with fired black lines suspended by 3-core white circular flex with polished brass cover plate and arms and steel bronze centre ring. This range comprises 9 different fittings: a 7-lt. 5-lt. 3-lt. and 1-lt. pendant all intended for use with either 100/150watt or 75 watt lamps and also as a 75 watt 1-lt. wall bracket.

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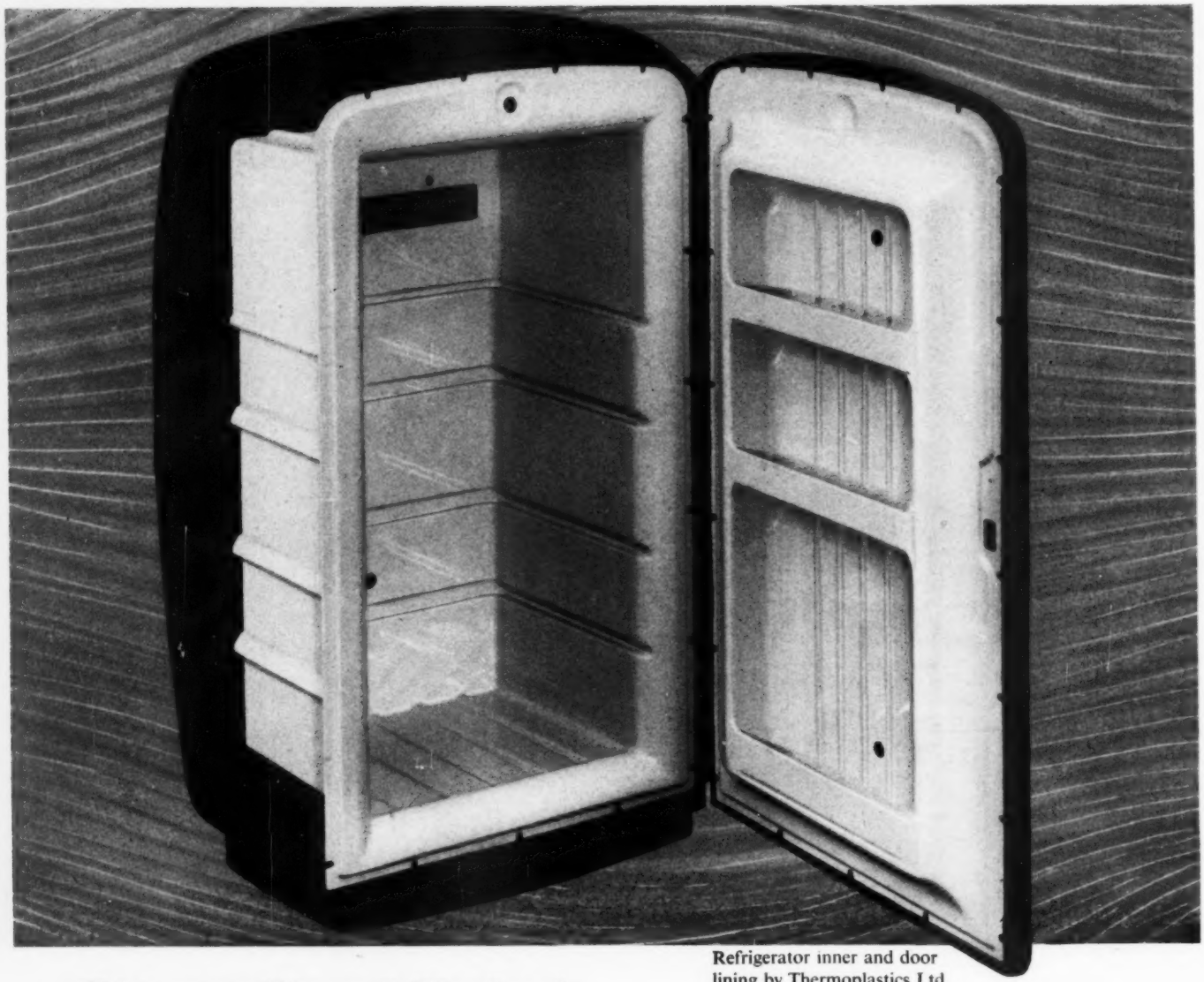
London Showrooms: 20/22 Mount Street, Park Lane, W.1. MAYfair 5671/2

AP 53



Refrigerator inner and door lining by Thermoplastics Ltd. Dunstable

Streamlined linings

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1902

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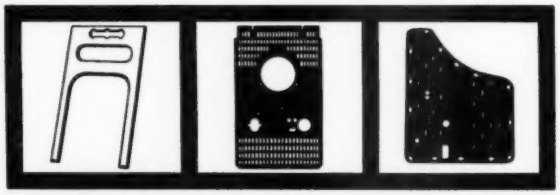

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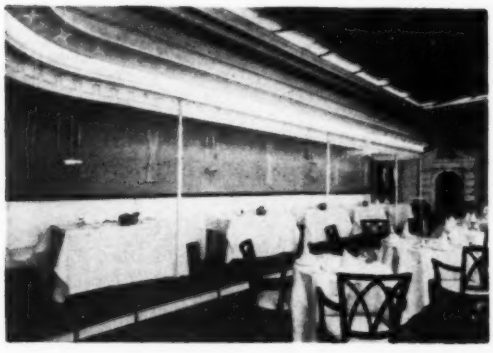

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TROUGHTON & YOUNG

TROUGHTON & YOUNG (Lighting) LTD.,
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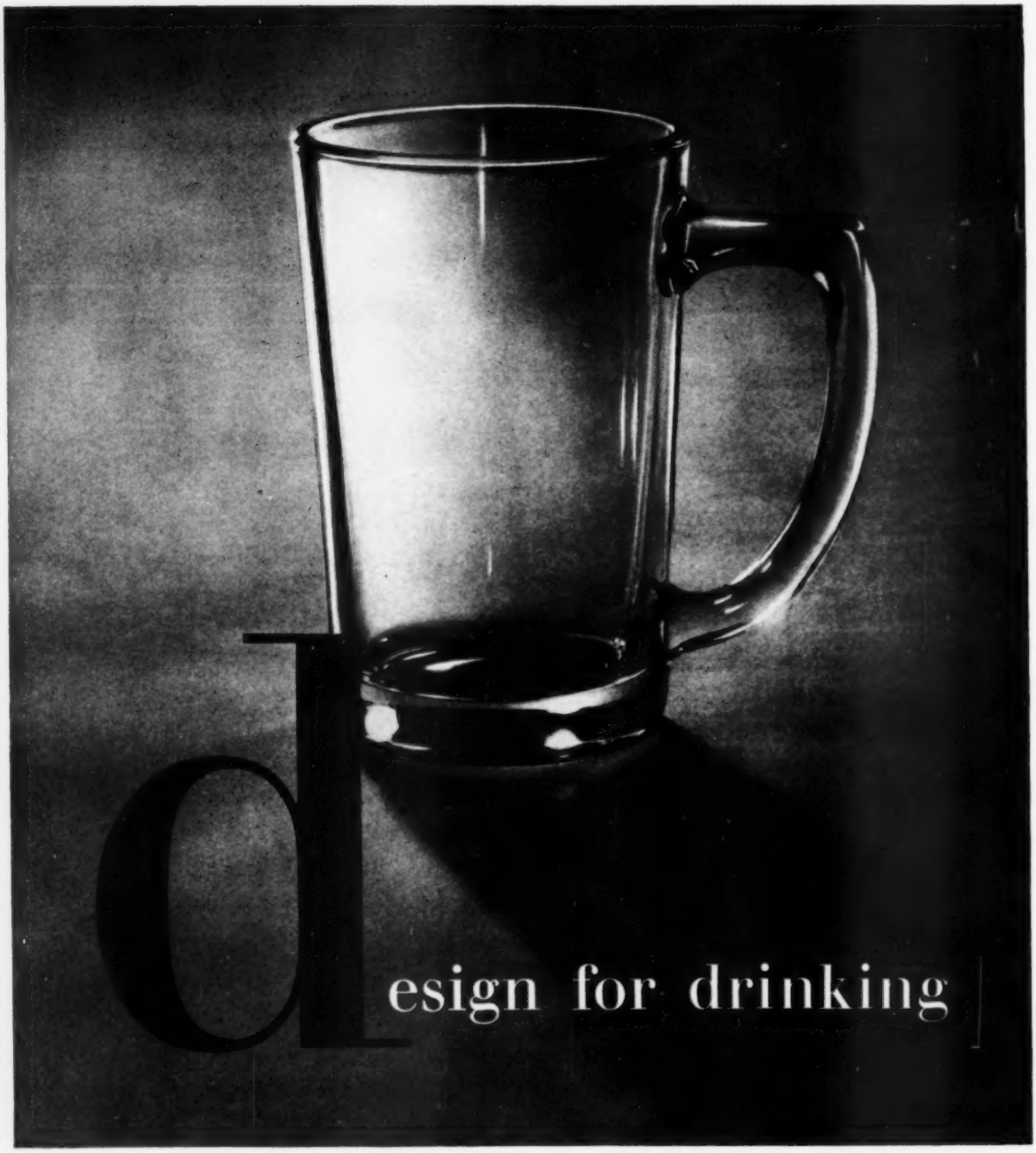
And at Rodney Street, Liverpool 1.

Designer: Jack Stevens, Esq.

THE RESULT OF TEAMWORK



A beer mug, designed by
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Distributors, Johnsen & Jorgensen
Limited, in conjunction with
Britain's largest producers of
table glass, United Glass Limited.

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in any material
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DECPOL-POLYESTER

by WRIGHTON

A LIFE-LONG GLOSS FINISH FOR THE *'Californian'*

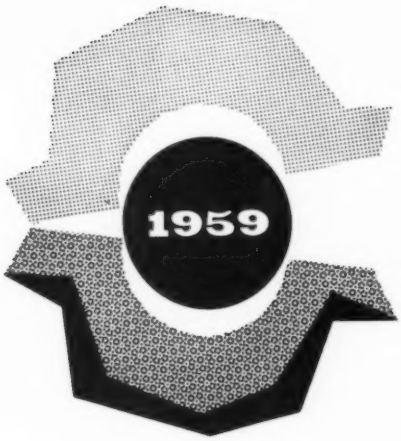
—TODAY'S MOST LUXURIOUS KITCHEN

The Wrighton Californian has been designed by NIGEL V. WALTERS, F.S.I.A., *and was selected by the* COUNCIL OF INDUSTRIAL DESIGN *for display in the* DESIGN CENTRE, LONDON.

Decpol-Polyester finish is available only on the Wrighton Californian kitchen.

Decpol-Polyester sets an exciting new fashion for kitchen finishes. Now the Californian—and only the Californian — becomes the first British kitchen furniture with a finish that is scratch-resistant and colour-fast, can be washed or polished and is incredibly hard-wearing. Offered in 9 high gloss colours, Decpol-Polyester is available on the front and end surfaces of all Californian kitchen units. The Wrighton Californian, designed in 21″ module, has seasoned timber units trimmed with natural beech . . . drawer interiors are finished in mahogany . . . choice of stainless steel or vitreous enamel sink units and nylon door-catches on all cabinets.

P. WRIGHTON & SONS LIMITED · BILLET ROAD · WALTHAMSTOW · LONDON · E.17



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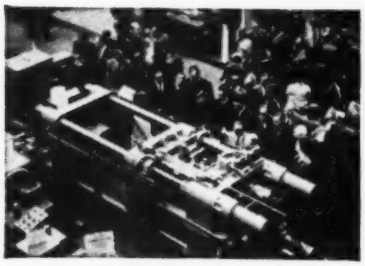
international plastics exhibition and convention



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The INTERNATIONAL PLASTICS EXHIBITION at Olympia, London, 17-27 June, will provide a complete up-to-the-minute picture of plastics progress in the industries of the world.
Thousands of exhibits will combine to present the newest plastics materials, equipment and industrial and domestic finished products. Here you can talk plastics with experts from many countries – see plastics machinery in action – gather new ideas and study new techniques. A Design Display of the world's finest plastics products will include the work of leading industrial designers from a dozen countries, each article selected by the appropriate design institute. Do not miss this vitally important event.

Exhibition organized every second year by BRITISH PLASTICS an Iliffe journal

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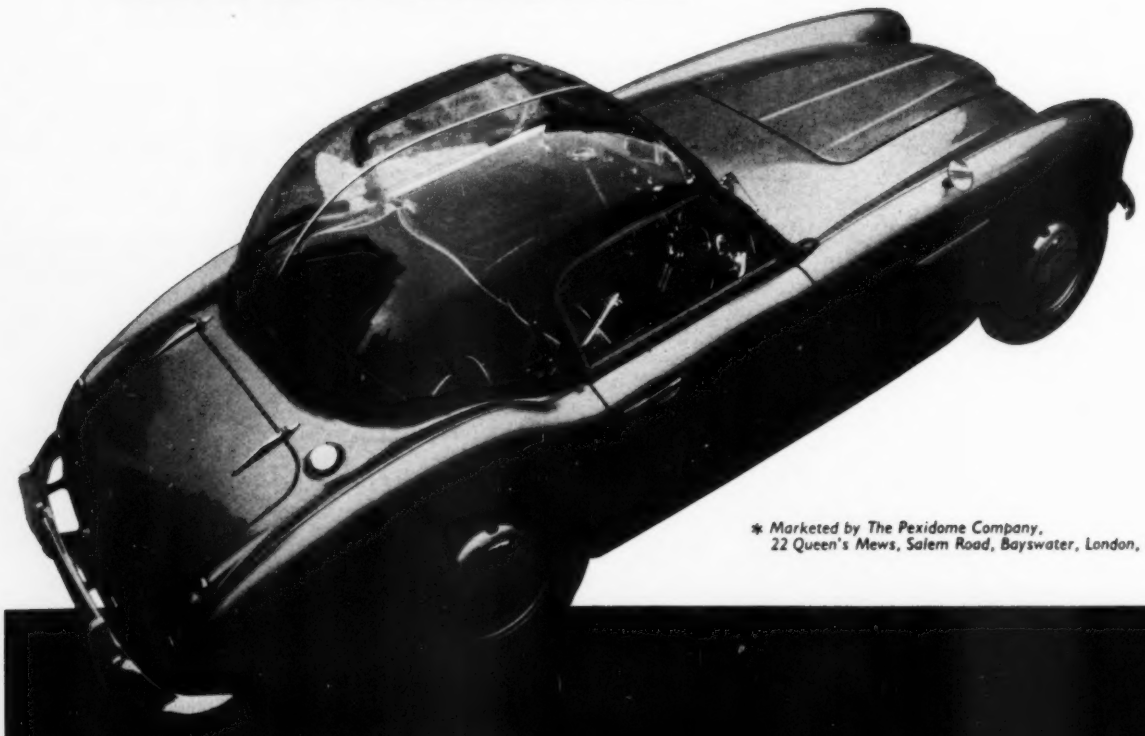
'Pexidome'* hard-top made from 'Perspex' for Austin Healey Cars



* *Marketed by The Pexidome Company, 22 Queen's Mews, Salem Road, Bayswater, London, W.1.*

WITH THIS detachable 'Pexidome' hard-top on the Austin Healey 100-six, the designers have achieved the ultimate in all-round visibility. Designed by The Pexidome Company, the hard-top was shaped in transparent 'Perspex' acrylic sheet by the Triplex Safety Glass Co. Ltd., to give full weather protection yet retain the effect of an open car.

This 'Pexidome' hard-top is a superb example of modern design and craftsmanship. That is because 'Perspex' can be heat shaped which offers very considerable scope to the imaginative designer.

'Perspex' will withstand weather conditions in all parts of the world and the corrosive atmosphere of most industrial areas. It is light in weight, long lasting and remains attractive throughout its life. 'Perspex' is a tough, easy-to-clean material with a high light transmission and is available in a wide range of transparent, translucent and opaque colours and in clear and opal sheet.

'Pexidome' designed and fitted to Austin Healey cars by The Pexidome Company, Bayswater, London. It was shaped in 'Perspex' acrylic sheet by The Triplex Safety Glass Co. Ltd.

'PERSPEX'

'Perspex' is the registered trade mark for the acrylic sheet manufactured by I.C.I.

IMPERIAL CHEMICAL INDUSTRIES LIMITED · LONDON · S.W.1

ICI

P.671

hille

Designed by Robin Day

Status Group office furniture

Hille of London introduce an important new series of furniture for the office and home. This furniture has been designed to meet the needs of office planners and interior designers. It comprises desks, tables and storage units in a wide range of sizes, yet related in such a way that they can be assembled in many combinations. Individual preference is further served by a choice of walnut, mahogany or teak with either timber or plastic tops. Other features include alternative pedestal and drawer interior fittings, heat and stain proof finishes and either satin chrome or black frames. The quality is excellent and prices remarkably modest.

For a true evaluation of its high quality this furniture should be seen at the Hille showrooms.

Hille of London Limited
39/40 Albemarle Street London W1 HYD 9576/7
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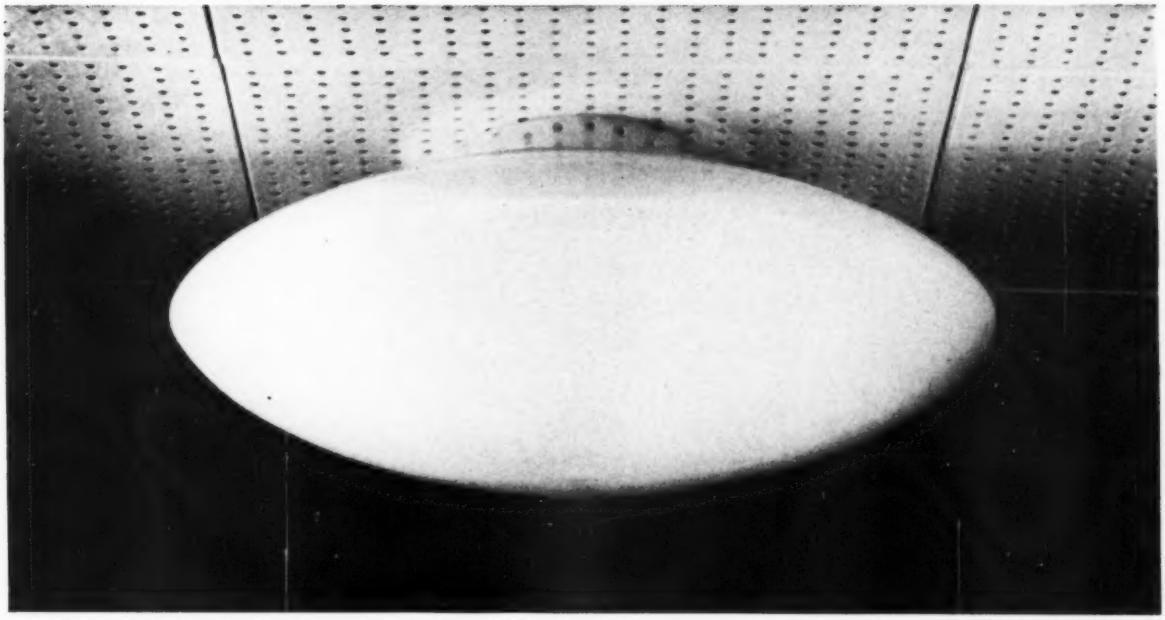
The Design Centre label

Look before you shop. That is the slogan of the London Design Centre, a permanent but changing exhibition of well-designed goods. But not everyone can visit the Centre, so the Council of Industrial Design is giving shoppers all over the country the chance of looking, when they shop, for the Design Centre label. People who buy goods bearing this label will know they are getting designs that have been selected for showing in The Design Centre. ***Look for the label.*** It is already reaching the shops.



MA 1500 series from 34/8 plus tax

Designed by Paul Boissevain, Dip. Arch., M.S.I.A.

announcing the new ELLIPSE SERIES 10" 12" 14" 18" & 22" 60-300w

The Ellipse series provides architects and engineers with a basic range of 120 elegant lighting fittings, of slim appearance, which do a first class lighting job. The quality and finish is of the highest order, and the construction without use of screws or levers is simple, effective and foolproof, allowing for easy fixing and maintenance.

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You are invited to visit our spacious showroom on the 1st Floor and to make use of the improved facilities of our special advisory service.
Our artist Eric Thomas depicts Palladio wallpaper " Treescape " No. 44421 as used in the Boardroom.

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THE SPECIFICATION OR DIRECTION
OF DECORATIVE SCHEMES

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THE WALL PAPER MANUFACTURERS LIMITED
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WPM

stainless steels

by design

on the

AUSTIN A 40

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is the only company in Europe to devote all its activities exclusively to the production and development of stainless and heat-resisting steels.

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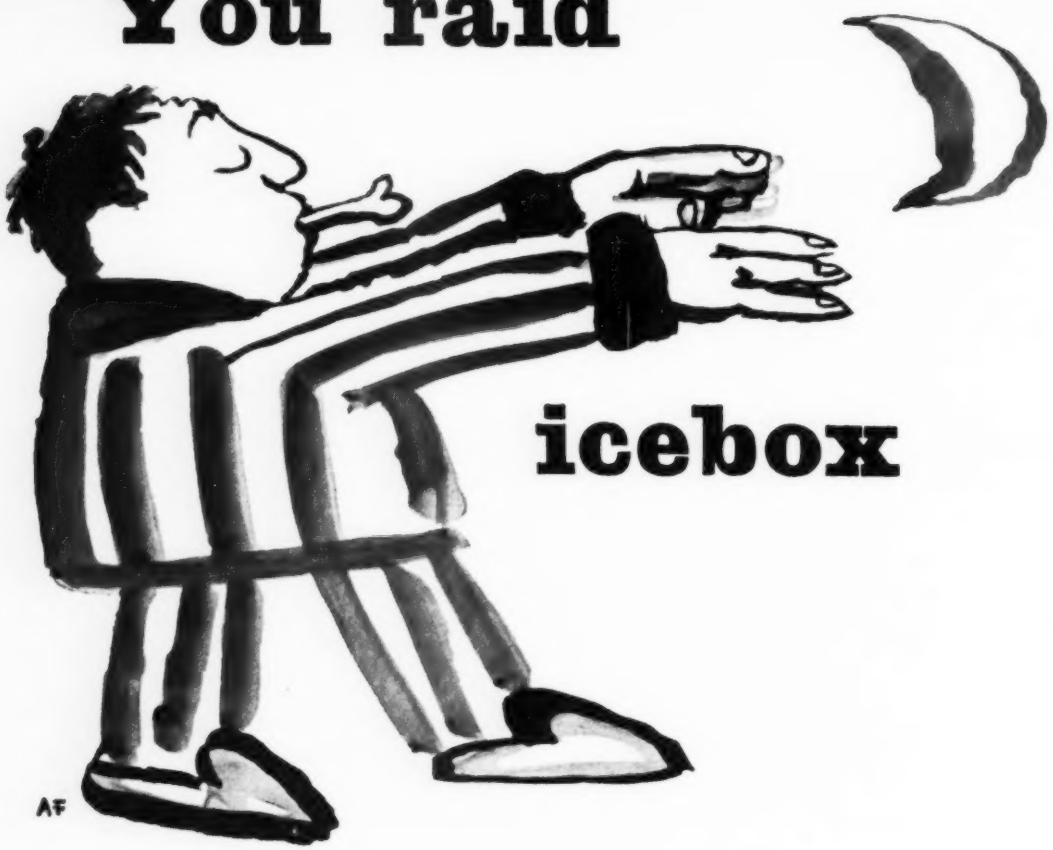

icebox

Night. Starvation. Night. Owls hoot, clocks strike, wives snore like cellos.

Arise, get up, poor fellows! Raid icebox. Burgle refrigerator.

Stair creaks . . . clock tocks . . . hinge squeals . . . cat screams . . . dog groans . . .

heart hops . . . All lost? Wife's mellow snore . . . Excelsior.

Refrigerator! No nerves now. Cool as ice. No noise . . . no!

Open, click, shut, click, open, click, shut. Quiet.

Open: *leg of chicken.* Shut: *sealed, sure, safe sound.* Wilmot Breeden.

Latch handle, ingenious mechanism, all Wilmot Breeden. Open, shut. Effortless. Robust.

Research. Science. Mathematical principles. Miracle of. Wilmot Breeden.

Make latches and locks for refrigerators. And. For automobiles and. Make bumpers, handles, window-winders. And again. *Virtually every British car roads today components Wilmot Breeden.*

Ah. Aha. Ahaha! Sleep, now.

WILMOT BREEDEN are at Birmingham: *also at London, Manchester, Bridgwater, Glasgow, Melbourne, Toronto.*

Number 124

April 1959

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Editorial Circulation Advertisements The Council of Industrial Design, The Design Centre, 28 Haymarket, London SW1 Tel : TRAfalgar 8000 AND The Council of Industrial Design Scottish Committee, Scottish Design Centre, 46 West George Street, Glasgow C2 Tel : Glasgow DOUglas 3914

Design may be obtained from booksellers at home and abroad. Yearly subscription rate : UK 40s post free

PROFILE OF A CREATIVE MIND

Potter

Josiah Wedgwood (1730-1795) has been described as the first potter to have combined good design with industrial processes. Wedgwood's cream-coloured earthenware was the forerunner of all good tableware while his Jasperware is a Connoisseur's delight.

Wedgwood's mental powers and artistic perception were far in advance of his time. He had a love for original experiment which was not always appreciated or welcomed by his conservative rivals. Wherever possible, Wedgwood applied his cultivated taste for ornamental art in an endeavour to modify the crude, if decorative, treatment that characterised English potteries of the 18th Century. Though he may have lost the individuality of the rougher pottery, Wedgwood replaced it with beauty and utility — lids fitted, spouts poured, handles could be used. It is said that Wedgwood was a mere employer of artists who translated their designs into clay, but he was more. He could adapt and invent, faculties which revealed themselves in new materials and methods, and the origination of new forms.

In I.C.I., creative minds are constantly searching for new products and processes, and for improvements to existing ones.

ICI

Art begins at home

There has been general approval of the Chancellor's decision to give a more realistic scale of support to the fine arts. But there are still plenty of people who regard this as a luxury, even a waste of money. The fine arts do not impinge on their lives and they see no connection between them and the industrial arts, the useful everyday things which form their background. This is understandable, because even the museums and art galleries themselves are notoriously uninterested in the design of equipment for their own use, such as chairs or coat hooks. What Arthur Clutton-Brock, the well known art critic, wrote in 1919 remains true today:

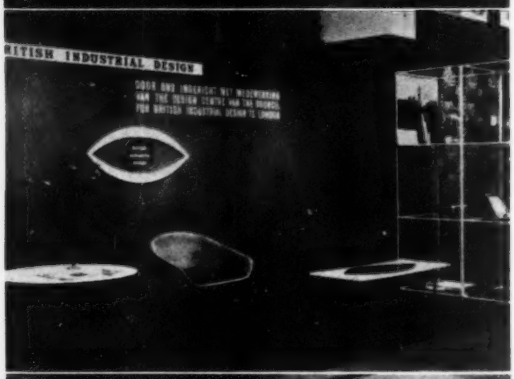
"We cannot cause men of artistic genius to be born; but we can provide a public, namely, ourselves, for the artist, who will encourage him to be an artist, to do his best, not his worst. I believe that the quality of art in any age depends, not upon the presence or absence of individuals of genius, but upon the attitude of the public towards art . . . At present we have neither the state of society nor the state of mind; and we can attain to both not by connoisseurship, not by an anxiety to like the right thing or at least to buy it, but by learning the difference between good and bad workmanship and design . . . and only so will the arts of use, and all the arts, revive again. For where the public has no sense of design in the arts of use, it will have none in the 'fine arts'. To aim at connoisseurship when you do not know a good table or chair from a bad one is to attempt flying before you can walk. So, I think, the professors of art at Oxford or Cambridge should be chosen, not so much for their knowledge of Greek sculpture, as for their success in furnishing their own houses. What can they know about Greek sculpture if their drawing rooms are hideous? I believe that the notorious fallibility of many experts is caused by the fact that they concern themselves with the fine arts before they have had any training in the arts of use."

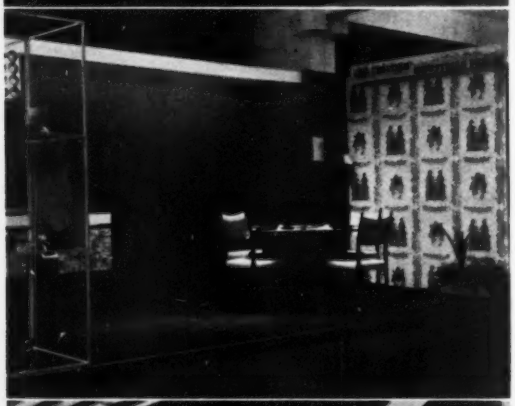
These are wise words, just as applicable today as when they were written 40 years ago. A drawing by Picasso and a copy of Bryan's *Dictionary of painters and engravers* in the managing director's office do not atone for a bad office building badly furnished, and ill-designed chairs are an offence in a museum housing some of the great paintings of the world. The fine and the industrial arts stand or fall together.

But things are not made ugly from perverseness or sheer wickedness. We have to face the fact that, in a great number of cases, they are ugly because no one on the board notices such matters, and they will not be noticed until money is being lost because ugliness is no longer a saleable commodity. Even a few years ago there seemed little prospect of such a revolution, but the time may be nearer than many people think. Already much valuable time has been lost by many firms which have yet to realise that a sound design policy cannot be put into operation effectively in a panic. G.R.

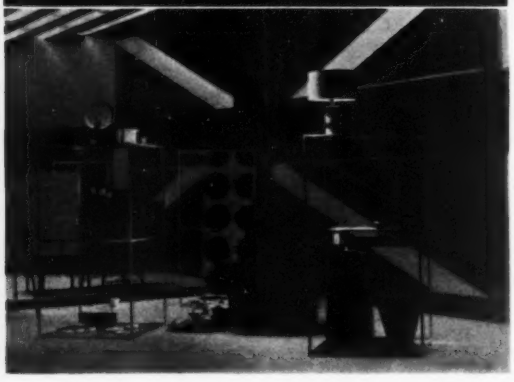
HOLLAND SHOWS BRITISH

HBM Ambassador in Holland, Sir Paul Mason, leaning forward to inspect a display after opening the British exhibition in de Bijenkorf at The Hague. From left to right: Sir Gordon Russell; Dr H. W. M. Littaur, director of the store; H. Isaac, general manager, de Bijenkorf, and Mrs Isaac; Sir Paul and Lady Mason.





Two views of the exhibition at de Bijenkorf at The Hague, organised in collaboration with The Design Centre, London. All products shown are on sale.



Window display of British goods at the entrance of The Hague store.

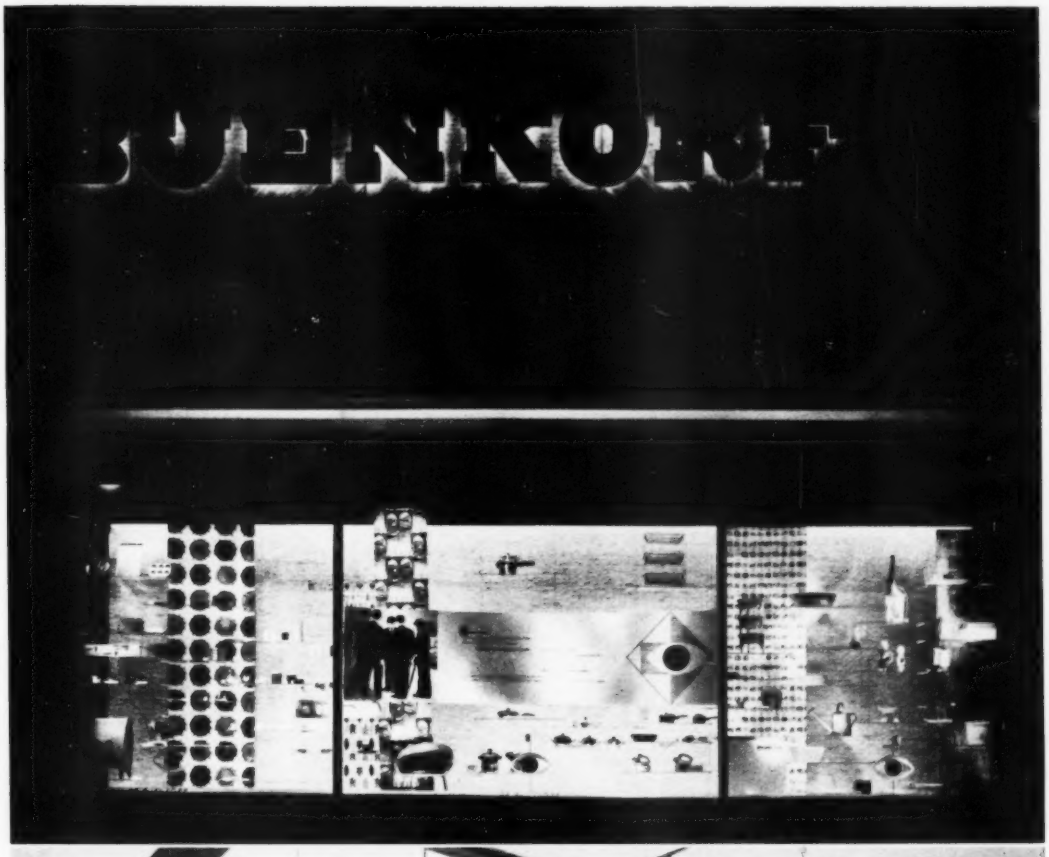
On the evening before the British Ambassador in The Hague opened The Design Centre displays mounted by the de Bijenkorf stores, Sir Gordon Russell, director of the CoID, told an audience of the Society Nederland-Engeland and other groups that the modern world lacked leaders in matters of design. Most people preferred the safe respectability of inaccurate historical styles and funked the more exacting course of developing a critical and unbiased attitude towards the work of living designers. To do so required serious thought, and thinking was hard work. Moreover, leaders today were apt to be unpopular people whose activities were regarded with some suspicion by the established rearguard; to lead is to run the risk of being 'offside'.

On the whole retailers are not remarkable for their leadership. There are some obvious exceptions in Britain, in America and in Europe, who believe that the market for things which are not ugly can be developed and exploited, to their long term commercial advantage. And the number of department stores at home and abroad which see in The Design Centre an opportunity for promoting such a reputation seems to be growing; the Dutch store, for example, selected from the Centre all the British goods in the display and took them into stock so that they could be sold to the public.

Dr H. W. M. Littaur, director of the de Bijenkorf store in The Hague, said at the opening of The Design Centre exhibitions that the great success of The Design Centre made him wonder why more good things are not available to choose from, and why more advantage is not being taken of those that are being made. He said that British design since the war had reached a significant stage. Not for generations have so many people been so interested in and well informed about good design, nor indeed has the flow of good designs been so great. That is how the situation in Britain strikes a foreign retailer, albeit one whose organisation decided to commission Henry Moore to decorate its new building in Rotterdam.

If Dr Littaur is right in his assessment of the present state of design in Britain, then manufacturers and retailers alike can risk a spirit of leadership with a reasonable chance of being in the limelight, which after all is a better prospect than being left out in the cold. However, as a warning to wantons, I should perhaps add that the limelight has, in common with the television screen, the knack of showing up any lack of conviction.

J. NOEL WHITE



A window in de Bijenkorf, Rotterdam, announces:

"*ENGLAND IS*
the country of the bowler and umbrella,
Horse Guards and Eton College,
Windsor and Chippendale,
Churchill and Big Ben . . .
So we know England's tradition.

ENGLAND IS ALSO
the country of the Bristol *Britannia*,
the Austin and the BBC,
the Angry Young Men and Henry Moore,
Benjamin Britten and Alec Guinness . . .
England is a modern and creative country.
This small exhibition demonstrates the modern and the creative side, which was brought about in co-operation with
The Design Centre in London.
The products you find here were designed by well known designers and made by British industry."

Part of the display treatment in the Rotterdam store recalls that of The Design Centre, London.

ON THE LINE OF SIGHT

This is the first joint presentation of two newly developed methods of marking eye movements. Recordings of the ways in which consumers or operators use their eyes could provide unique guidance to the designers of products or displays.

John Garner

How do we use our eyes when we look at a moving scene or drive along a busy road, when we enter a building or shop or when we perform a complex visual task such as that carried out by an inspector searching for a defect in an industrial product? This is no idle question of passing moment. It raises some of the most fundamental problems about human behaviour. We are so utterly dependent on vision for carrying out everyday tasks and yet we hardly know how the eyes are used in acquiring visual information from the world around us. Given this knowledge, there is no question that we should be far better able to design machines, motor cars, aircraft, railway signalling systems, etc, so that operating efficiency would be improved and accident risks reduced. The design of power station meter and control panels, and the layout of goods in shops and exhibitions, would all come in for scrutiny and improvement.

The study of eye movements has interested physiologists and psychologists for a great many years; various techniques for recording these movements have been developed over the last 50 years. Over the past 5–10 years three techniques have been developed to the stage where it is now possible, in the laboratory at least, to begin to answer the questions posed at the beginning of this article.

The most delicate eye movements, covering a few seconds of arc (ie about $\frac{1}{1000}$ part of a degree) up to a few degrees, have been recorded by a method which involves a contact lens, attached to the front of the eye. The contact lens carries a mirror which reflects a beam of light directed towards the eye. The method has been used almost exclusively to study the very small involuntary movements of the eye which occur when the eyes are in use. The most recent investigations of this problem, carried out by Professor Ditchburn and colleagues at Reading University, have revealed that the eyes are in constant, but fine, movement, even when we fix our gaze on a well defined point. In their experiments, this fine oscillating tremor can be compensated by an ingenious device which shifts the image on the retina by an amount corresponding to the eye movement, thereby effectively annulling the tremor. It is found then that the

a light in his eye

Dr W. F. Floyd, the author of this article, is senior lecturer in physiology at the Middlesex Hospital Medical School, University of London, and consultant physiologist to the General Post Office. He is a member of the road lighting sub-committee of the Road Research Board; of the joint Medical Research Council and D S I R committee on lighting and vision; and also of the advisory committee on anthropometric evidence for equipment dimensions, B S I. He has the unusual distinction of having been trained in mathematics, electrical engineering and physics as well as in physiology, and holds academic and professional qualifications in all these subjects.

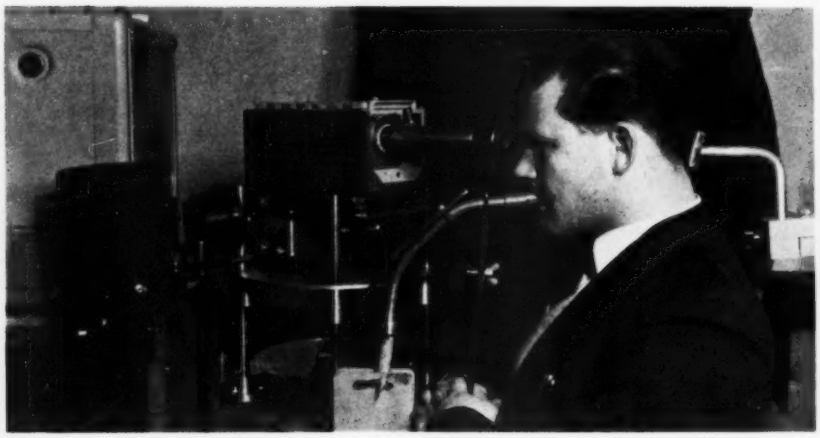
visual image fades, visual discrimination is seriously impaired and there may even be a total loss of vision for a few seconds until a flick of the eye shifts the image to another part of the retina. The process then starts over again, the image fading in its new position.

It is already clear from these experiments that this fine oscillating tremor of the eyes is an essential part of the process of vision, and that perception depends on it. Further experiments along these lines are likely to reveal important information about the detailed action of the retina and the optic nerves, and about the processes by which eye movements are effected.

television records movement

1 and **2** The laboratory system developed by the Mackworths to record eye movements. The subject's head is fixed, and he regards the scene on the display monitor television tube; light reflected from the eye is picked up by the eye camera and superimposed on the record monitor tube.

1



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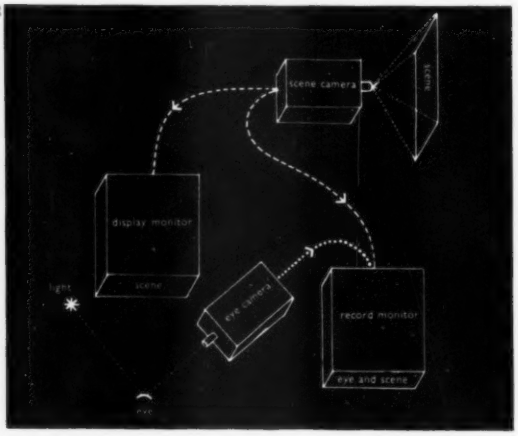
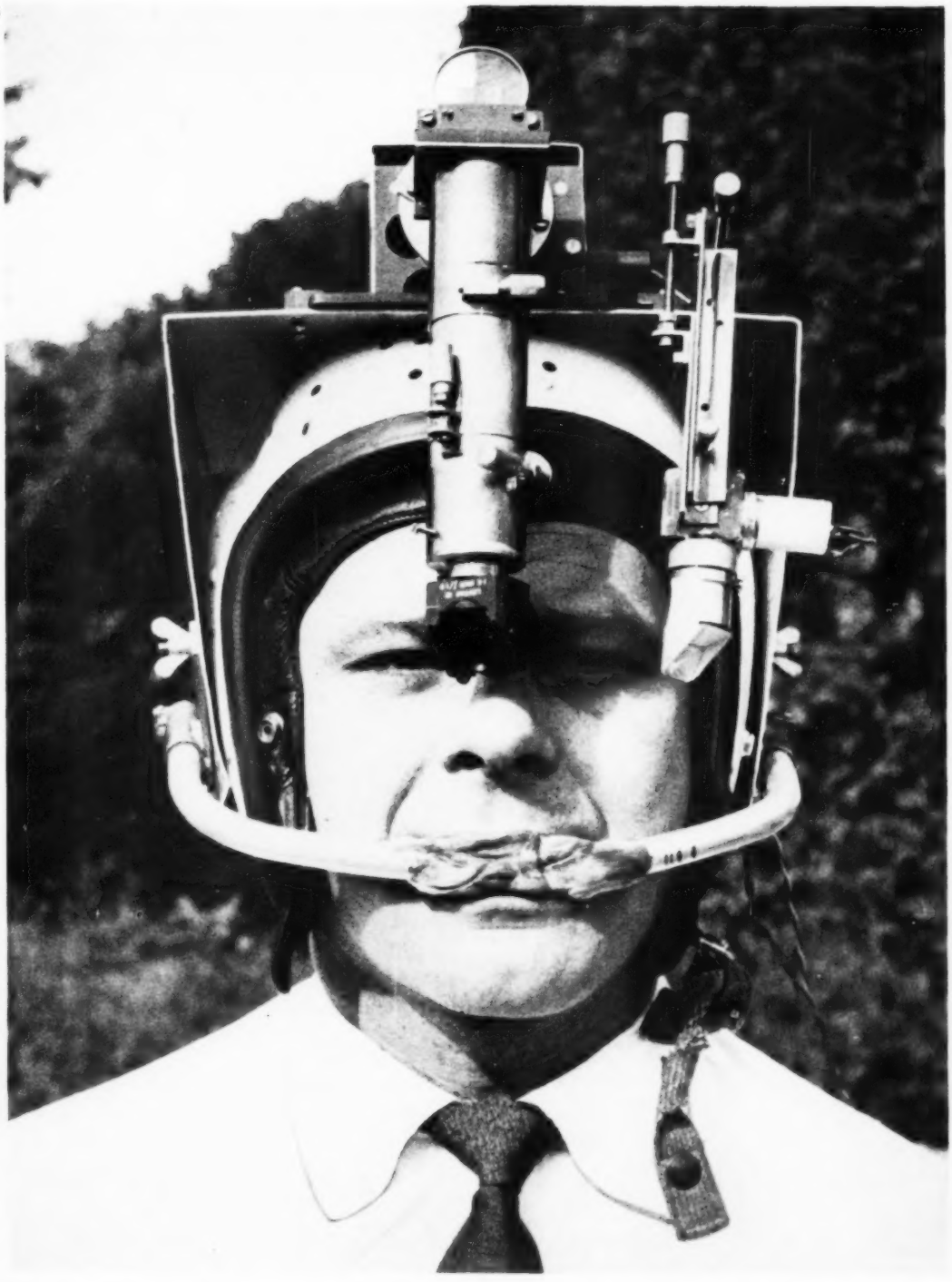


Larger movements of the eyes, such as occur voluntarily when we scan an object or a view, have been studied by two methods. The first of these was originally described by Dodge in 1907*, and depends on the recording of a beam of light reflected directly from the cornea, ie the front surface of the eye. This is known as the corneal reflection method. Recently, Dr and Mrs Mackworth, working in the Medical Research Council's Applied Psychology Research Unit in Cambridge, have developed an extremely elegant modification of this technique, in which two television cameras are connected together in a closed circuit to produce a composite picture. One camera is arranged to give an image of the visual scene towards which the subject is looking. The second camera registers the eye movements by means of the spot of light reflected from the front of the eye, **1** and **2**. The 'picture' given by this second camera consists of a bright patch of light which moves across the screen to mark the direction in which eyes are turned. The pictures from the two cameras are then

*Bibliography, page 69.

3

Photographs on pages 27 and 28 are by John Garner



3 and **4** In the Mackworths' portable version the helmet carries a television camera, **4**. The light source is placed at the side of the face. When the beam is reflected from the eye it enters the periscope mounted above the nose and is transferred to the camera. Thus the camera combines the two functions of scene recorder and eye-marker. The apparatus shown is an early prototype.

combined on one recording screen. In this way it is possible to mark the position in the visual scene to which the subject turns his gaze. The particular details regarded by the subject from moment to moment are immediately identified by the eye-marker which dances across the scene, pausing here or there.

The corneal reflection method used by the Mackworths has the advantage of stability of the absolute position of the eyes and of relative simplicity of recording (apart from the cost of television cameras) as compared with the second method (electro-oculography) to be described later. It has the disadvantage, however, that it is restricted to relatively small movements of the eye – not more than 15° off centre. It can only be used when the eyes are open, and the technique demands very careful head fixation in relation to the eye movement camera.

A portable form of the apparatus, **3** and **4**, is now being devised with the help of Sten Holmqvist of Lund University, Sweden, and Dr E. Llewellyn-Thomas of

continued

the Defence Research Medical Laboratories, Toronto. This can be worn by an aircraft pilot or car driver, **5, 6** and **7**. One camera is used carried on a helmet headgear registering both the scene and the corneal reflection. The rest of the equipment is stowed in the aircraft or car. It might eventually be possible to develop this apparatus still further by the addition of a radio link between the subject and the recording gear. In this way the subject would be entirely free to move about anywhere within range of the radio link – a sort of 'Walkie-Talkie' eye-marker equipment. At present the subject is limited in range by the length of the connecting cables.

5

6

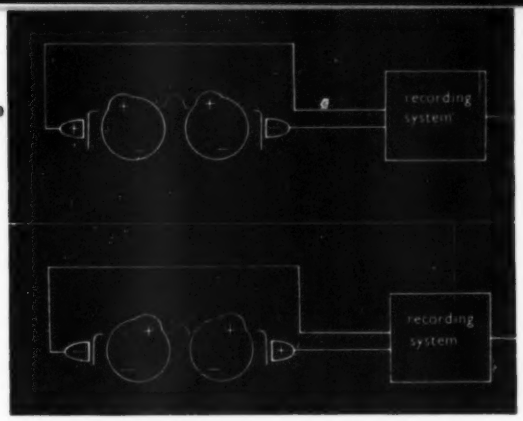
7

5, 6 and **7** These views demonstrate the application of the Mackworths' portable equipment to the study of eye movements during driving. In **5** the recording equipment is mounted in the back of the car. Some idea of the range of movement can be gained from **6** and **7**.

Dr N. H. Mackworth graduated in medicine at Aberdeen University in 1939 and came to Cambridge to work for the Medical Research Council under the direction of Sir Frederic Bartlett in 1940. Later, in 1944, the MRC established its Applied Psychology Research Unit in Cambridge to study the problems related to people working under difficult conditions. In 1947 Dr Mackworth was elected to a research fellowship at St John's College, Cambridge, and in the same year he obtained the PhD degree at Cambridge University for his work entitled *Researches on the measurement of human performance*. In 1952 he was appointed director of the MRC Unit – the post he held prior to joining the Defence Research Medical Laboratories in Toronto, Canada, in 1958.

8, 9 and 10 The North-South and East-West electrodes mounted on the face (held by suction) are shown positioned for the Shackel method, **8**. When the eyes are turned to the left, **9** (top), the electrical potential of the eye causes the left electrode to become positive and the right electrode negative, and the converse with the eyes to the right, **9** (bottom). The recording system uses the changes in potential to make a pen or spot of light move left or right accordingly. In **10** the subject is searching along the horizontal window for a very dim light which may appear anywhere and at any time. This experiment could help to give answers to some of the inspection problems mentioned at the start of the article.

9



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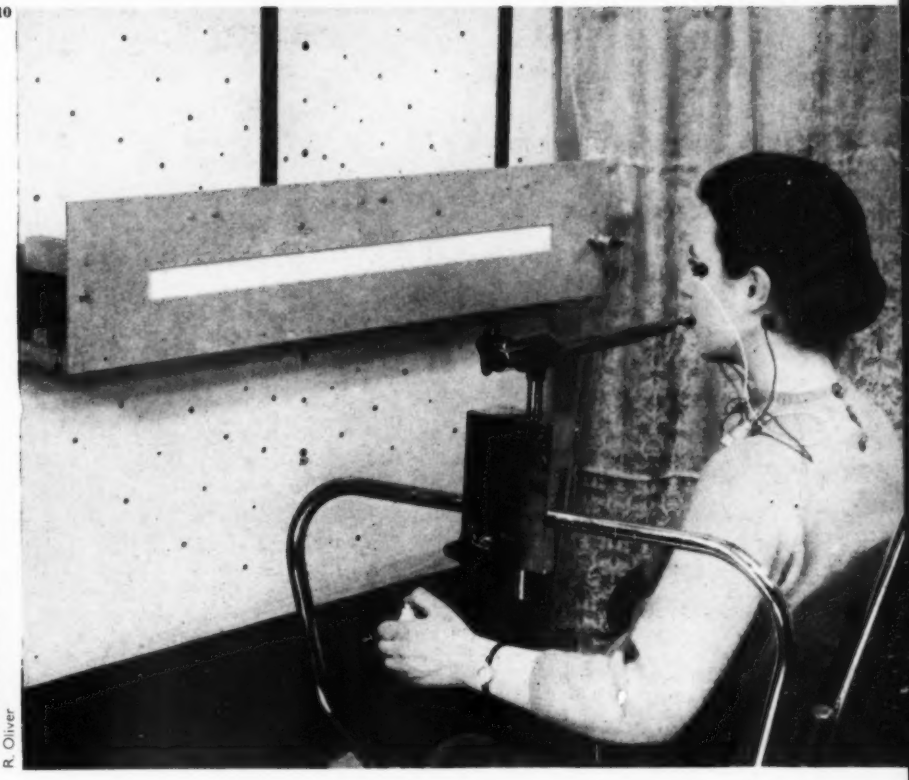


R. Oliver

electrodes record movement

The second method for studying the larger, voluntary eye movements depends on the fact that there is a difference of electrical potential between the front and back of the eye, **8**, **9** and **10**. With the aid of electrodes placed on the skin near the eyes it is possible to pick up this potential difference and to record and measure it with an amplifier. When the eyes move, this potential varies with the amount of eye movement. The variation is regular and consistent, and the size of the potential so recorded can be used as a measure of the extent of eye movement. With the help of two pairs of electrodes placed North-South and East-West in relation to the eyes, it is possible to determine not only the extent of movement but also its direction (on the same principle as that used in wireless direction finding).

This is the basis of the method now known as electro-oculography and developed in this country by B. Shackel working at EMI Electronics Ltd. The method has the advantage that eye movements can be recorded up to 30° or even 45° off centre, and measurements can be made even when the eyes are closed as during sleep.

For many practical applications mobile recording is obviously needed. Mr Shackel's solution was to mount a camera on the subject's head, **11**. He demonstrated such an arrangement in action during a television science programme in January 1958. Wherever the subject moves, the camera also faces the field of view. The eye position, converted into a spot of light, is superimposed upon the picture from the head camera, **12**.

continued

11

12

11 In Mr Shackel's portable version the camera on the head shows the scene before the subject wherever he moves. The electrodes detect his eye position and mark it by a spot of light on the scene shown on the television monitor.

12 Excerpts from a cine recording of the television monitor screen: the picture from the head camera shows the subject's field of view and the light spot marks where the eye is looking. As Mr Shackel walks across his laboratory at E M I the subject sweeps his head to the right to follow the moving figure, while scanning it with his eyes.

B. Shackel. After a classics degree in 1947 and three years as a naval officer Mr Shackel returned to Cambridge in 1951 to read psychology. He joined the M.R.C. Applied Psychology Research Unit in Cambridge in 1952, and since 1954 has been research and engineering psychologist at E.M.I. Electronics Ltd.

13

13 The Traffic and Safety Division of the Road Research Laboratory has long been concerned with the problem of how the driver of a motor car uses his eyes – to what signals does he pay most attention? how can urgent signals be made appropriately demanding? what are his relative priorities when the roads are busy and visual information is crowding in upon him? how does he deal with mixtures of significant and irrelevant signals? In conjunction with this curved display the Road Research Laboratory has recently started to use the E.M.I. eye movement measuring apparatus developed by Mr Shackel, so that some of these problems look like being solved in the near future.

two methods compared

In its portable version the corneal reflection method used by the Mackworths requires the light source and the eye-marker periscope to be mounted in front of the eyes and rigidly fixed in relation to the head. The subject can scarcely cease to be aware of the presence of these units mounted in front of him; he may find this and the additional weight of the television camera on the head troublesome. From an experimental point of view, and from the point of view of the subject, the electrical method of recording eye movements is to be preferred. It causes less interference with the subject, since electrodes are easily attached to the face and are relatively inconspicuous. Mr Shackel and his collaborators have developed the electro-oculographic method to an extent that its inherent advantages are realisable in practice. As judged by the combined picture of eye-marker and field of view, the Mackworths have brought their method to an advanced state of development. It is, however, limited with regard to the amplitude of eye movements. It is worth noting that H. C. Weston showed that people generally avoid angular excursions of the eyes of more than 25°, preferring to use movements of the head, neck and trunk when regarding objects more than about 25° off centre from the line of sight. Clearly both methods are capable of yielding valuable information.

It is to be regretted, however, that Dr and Mrs Mackworth are now in Canada and have taken their equipment, know-how and ideas with them. However, E.M.I. hopes to continue with the study of eye movements, developing also the Mackworths' optical technique allied to Mr Shackel's idea of the head camera.

looking without seeing

Not many people believe that visual perception is dependent solely on information reaching the eyes from the external world: the brain also plays an important part. There are however many situations in which human action or behaviour depends largely on the flow of detailed visual information. The eye-marker methods of the Mackworths and Mr Shackel enable us to know which visual cues are regarded and which disregarded in a given situation, but not what is being perceived.

It has been recognised for a long time that an object may be regarded without being perceived. The Mackworths have shown that in search situations, eg **14** (page 69), the subject may look directly at the object for which he is searching without recognising it. In this

continued on page 69

The Face of the Firm, *an exhibition of house styles organised by the Design and Industries Association, is open at the Tea Centre, Lower Regent Street,* SW1 *until April 18 (10 a m - 6.30 p m Monday – Friday; 10 a m - 1 p m Saturday). In this feature, Alec Davis, who arranged the exhibition, discusses the factors that make up the face of a firm, and the conditions that make a good house style possible.*

House style: the face of the firm

ALEC DAVIS

For a manufacturer the most important design is the design of his products: that is a central tenet of the DIA's beliefs now as it has been since the association's foundation. But it must not blind anyone to two other facts: first, that many products, such as foods, drugs, cosmetics, paint, oil and petrol, cannot be designed in any normal sense of the word; and second, that good design in the incidentals of industry is desirable, both commercially and aesthetically.

What are the incidentals? Any business will need letterheads and invoices and probably a sign on its premises. Catalogues, packaging, delivery vans are near-necessities. And a firm's progress will often be helped by the incidentals of sales management, from press advertising to prestige booklets, showcards to showrooms: all designable items.

These are the features that make up the face of the firm, and make an impression on customers, suppliers, staff and the general public, which will be favourable or unfavourable according to the quality of their design. To the theorist it seems obvious that these features should be both well designed and designed in a consistent house style; but in practice this happens too seldom. The letterhead designed in 1909, the carton designed in 1933 and the gimmick of 1959 co-exist but can hardly be described as allies – until somebody *makes* them allies.

A house style does not create itself; it needs the collaboration of an enlightened client and an imaginative designer. It needs his co-operation not only for its creation but for its continuity. Continuing interest is essential if a house style is to remain flexible and not become a mere routine.

Where hostility to the idea of house style exists – and it does exist, not least in the minds of some designers – it is usually directed against the old-fashioned conception of house style as rigid standardisation. In fact, a good house style entails the establishment of certain standards – eg, in symbols, typography, pattern or colour – as a first step but not as an end in itself. It must ensure that if subsequent variations are made they are made deliberately and with good reason.

To accept a change of house colour, for example, because a certain printer or signwriter cannot produce the colour you want is to accept defeat; but to change a house colour when it begins to look old-fashioned, or to add a different colour for a new, separate department of the business, is good sense.

Development and diversity

That a house style must leave scope for development and variation is perhaps most important for the large firm with diversified trading activities. Such a firm may argue that it needs a number of related department styles rather than an overall house style – it may not wish to present the same face to the do-it-yourself man who goes shopping for a half-pint tin of itsp aint and to the professional buyer who orders its industrial chemicals by the tanker-full.

So far, this article has referred to manufacturers, but house styles are valuable for two other kinds of business at least – the service industries, and retailers.

A firm offering a service, whether it is a gas board or a local laundry, has no chance to express its character in its product, because it has no product; and this is a special reason why it should aim at a high standard of presentation in all its incidentals, whether typography for timetables, décor for showrooms and waiting rooms, or the scheme of paintwork for vans.

Retailers, because they are in direct touch with their customers, are in a good position to assess the impact of new house styles. In recent years more and more stores in London, and some in the Provinces, have shown enterprise in the commissioning of thorough

Exhibitors in *The Face of the Firm* are listed on page 71.

During its 25 years of existence, Robert Watson & Co (Constructional Engineers) Ltd has expanded rapidly and – perhaps inevitably – without conformity of style in its equipment, signs, or printed matter.

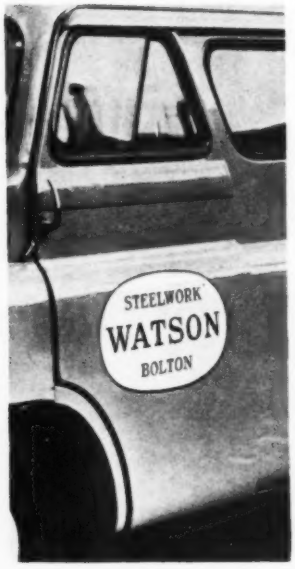
Alan Watson, a director of the firm, gives this account of what has happened, and why: "The styles were in some cases ugly, and in certain respects they were so much at variance that it was difficult to realise they belonged to the same company.

"The idea of tidying-up and giving some recognisable style to everything connected with the firm was conceived in discussion on advertising and public relations policy; the requirements were a bold, individual style which would impress upon the prospective customer that Watson was a progressive engineering organisation.

"Whereas the original conception was wholly concerned with advertising, it became apparent in the early stages that a house style can give a feeling of unity to a whole organisation, and, one hopes, a feeling of pride to those who are part of it. This intangible aspect is especially important in a company with branches as far from its head office (Bolton) as Bristol and Cumberland".

The house colours are black, grey and yellow.

DESIGNER *Eric Ferguson.* CONSULTANT *Spearhead Services Ltd.* PRINTER *Tillotsons (Bolton) Ltd.*



Robert Watson & Co.
(CONSTRUCTIONAL ENGINEERS) LIMITED
Bolton, Lancs.

SHIPPING SPECIFICATION OR MATERIALS ETC

FORWARDED FROM
PER S.S.
TO PORT OF
YOUR ORDER NO.
OUR REF. NO.
DATE

SHIPPING NO.	QUANTITY	DESCRIPTION	MARK	LENGTH Ft. In.	BREADTH Ft. In.	DEPTH Ft. In.	NETT WEIGHT Tns. Cwt. Qrs. Lb.	GROSS WEIGHT Tns. Cwt. Qrs. Lb.	REMARKS

Robert Watson & Co.
(CONSTRUCTIONAL ENGINEERS) LIMITED
Bolton

CLIENT
CONTRACT

DAYWORK

DATE	WORKMAN'S NAME	TRADE	HOURS WORKED MORNING	HOURS WORKED AFTERNOON	DESCRIPTION OF WORK

P.V. No.

Robert Watson & Co.
(CONSTRUCTIONAL ENGINEERS) LIMITED
Bolton

DATA SHEET

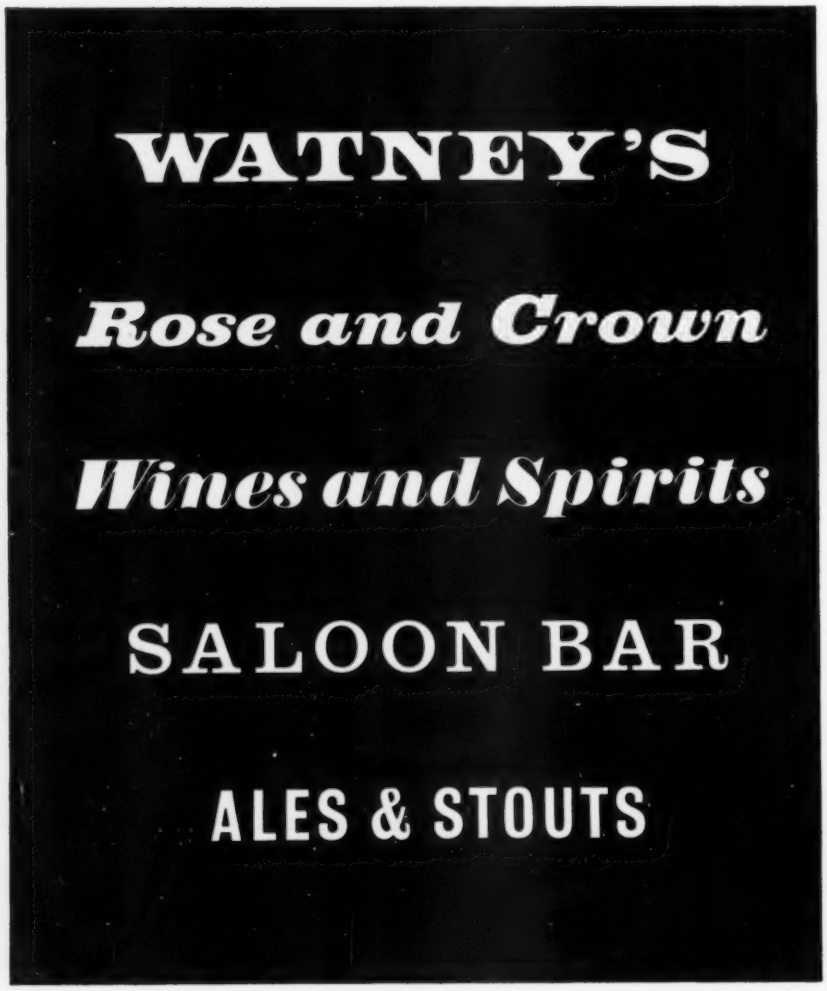
In our quotation we have included for the following material and specification. In the event of an order, these would require confirmation.

Description of Vessel

going styles from competent designers: this point should not be lost on manufacturers, who seldom have such close contact with the ultimate users of their wares.

Two perhaps surprising weaknesses in the application of house styles became evident when selecting material for *The face of the firm* exhibition at the Tea Centre this month. One is the practice of introducing a house style so gradually that it has none of the impact which comes when a change of face rejuvenates all the features at once. A firm cannot throw out its whole stock of stationery overnight, or repaint all its lorries between Saturday afternoon and Monday morning; this we realise. But surely it is desirable to set a target date, rather than let the introduction of a new style drag on indefinitely, damping its creators' enthusiasm and incidentally destroying its publicity value.

A more serious weakness is the almost complete absence of house style from personnel, welfare and staff training activities. A firm that prints its name in its advertisements in a wholly contemporary style of typography may still have Old English letters on its commissionaires' badges and buttons; and pension certificates



Pubs, like shops, can present a smiling or a frowning face to their prospective customers. The smile on the face of Watney extends beyond premises to showcards, beer bottle labels, waiters' trays, etc. Pubs are being restyled to make the most of their existing architecture, not to camouflage their character, which is often nineteenth-century, as in the Prince Alfred, London sw8, illustrated here.

Five standard letter forms have been adopted, all based on nineteenth century type faces – Clarendon Bold Expanded for the name 'Watney's', Caslon's English Two-line Antique, Thorowgood Italic, Clarendon, and Condensed Sanserif.

Design programme devised by Design Research Unit in conjunction with Watney's and its advertising advisers.

CO-ORDINATING CONSULTANT DESIGNER *Milner Gray*. COLLABORATING DESIGNER *Ronald Ingles*. COLLABORATING ARCHITECT *John Bruckland*.

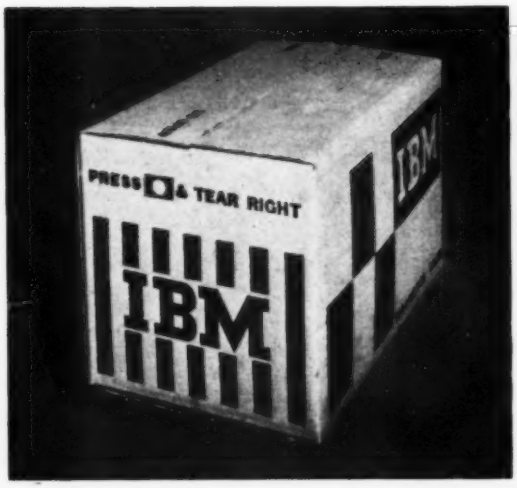
more often look like exhibits for a chamber of design horrors than something which the recipient should be proud to display. How often do staff training manuals show any style at all, let alone recognisable house style? Publicity managers and personnel managers should work together more closely than they do at present.

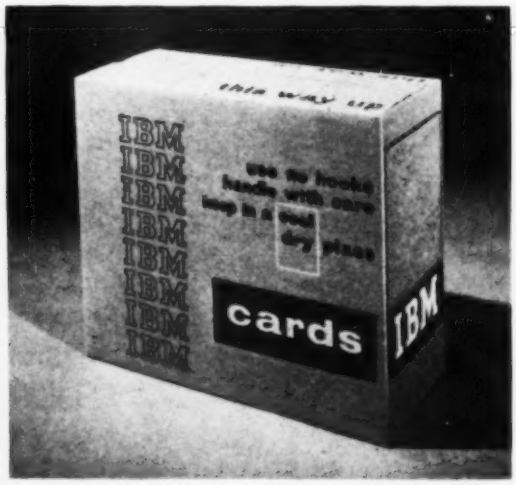
Today many firms are so big that their clerks and operatives might not recognise the face of the chairman if they saw him in the street – and that is a very sound reason why they should be able to recognise the face of the firm.

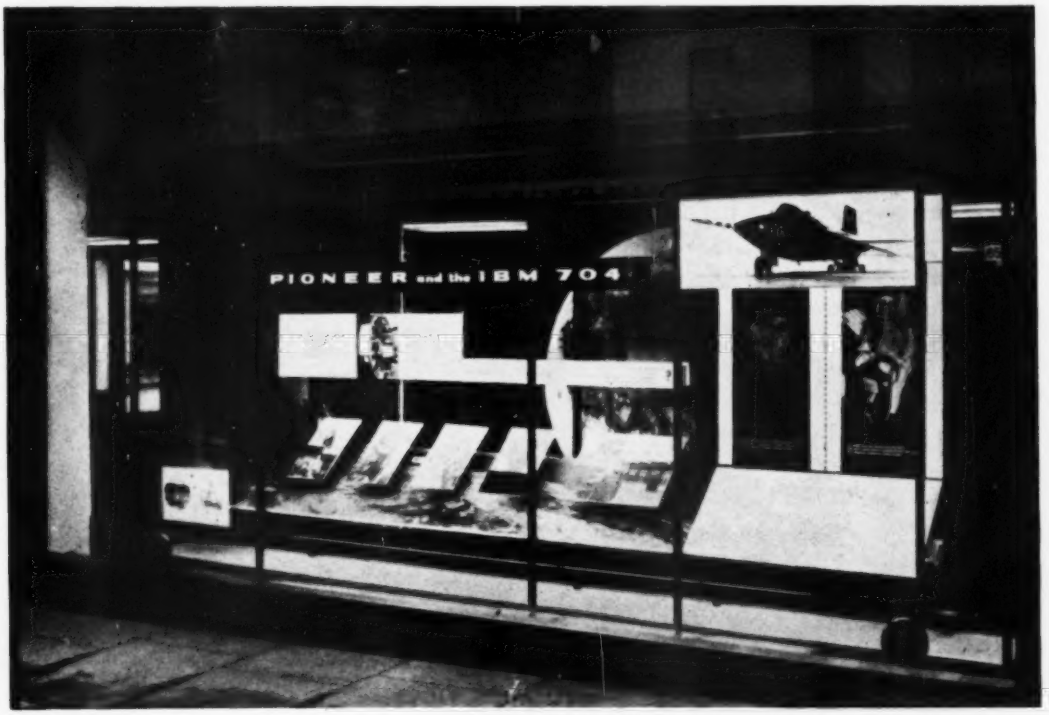
DIA DESIGN AND INDUSTRIES ASSOCIATION
13 Suffolk Street, Haymarket, London SW1 : Whitehall 0540

To modify a house style when it begins to look out of date is good sense. The DIA has practised what it preaches by redesigning its stationery while retaining the Thorne Shaded type-face long used for its initials. DESIGNER *Alec Davis*.

A comprehensive design programme has been evolved for IBM United Kingdom Ltd. CONSULTANT DESIGNER *Jonathan Green*. (*IBM logotype designed by Paul Rand, USA.*)

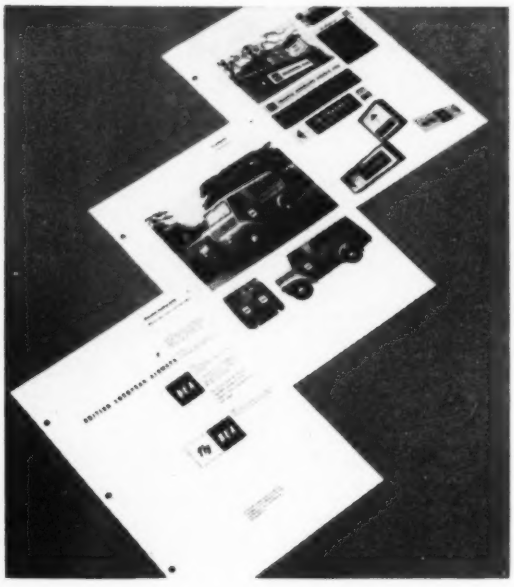






continued

A good house style begins with the establishment of standards but it does not end there. Recently, British European Airways produced a handbook for the guidance of departmental heads and area managers, illustrating the standards adopted by the corporation, eg Grotesque 9 for its name, Grotesque 9 italic for the initials when used alone; the square as a characteristic shape; red and grey as house colours. Part of the handbook is illustrated at top of facing page; the other pictures show that BEA's designers have done much more than apply a formula, rigidly and



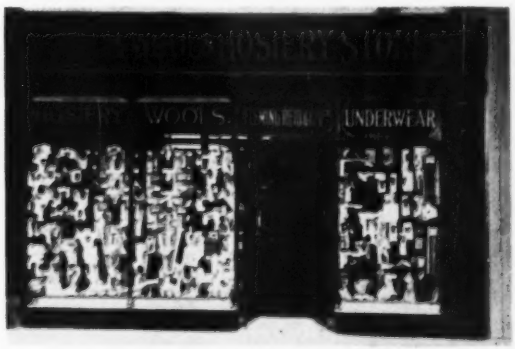
unimaginatively, to every design problem. To many foreign travellers, BEA 'speaks for Britain', and the face of this firm is a matter of national prestige as well as commercial value to BEA itself. ADVERTISING MANAGER *A. J. Burkart*. DESIGNER *John Lunn*. ASSISTANT DESIGNER *Mary de Saulles*.

Cgm

Two new name styles: ABOVE, for Churchill Gear Machines Ltd, Blaydon-on-Tyne; used on metal nameplates on machines, as well as packages and stationery. DESIGNER *Richard Hamilton*. BELOW, for Miss Worth, West End fashion shop; used on carrier bags, woven garment-labels, and printed matter generally. DESIGNER *Ashley Havinden*. ADVERTISING AGENTS *W. S. Crawford Ltd*.

Miss Worth

A recent change of name from Scotch Wool & Hosiery Stores to Scotch Wool Shop has been accompanied by a face-lift for many of this firm's 360 branches (with the rest to follow). The changes make a stride forward in the design of stationery, showcards, packaging materials, as well as shop fronts; they show a realistic appreciation of the needs of a chain of shops catering for a middle-class trade. House colours are Cambridge blue and slate. PROPRIETOR *Fleming Reid & Co Ltd, Greenock*. DESIGNERS *J. E. Slater Ltd*.



DESIGN ANALYSIS 13

Accident insurance machine

MAKER *Associated Automation Ltd* CONSULTANT DESIGNER *D.S. Associates Ltd*

In discussing a new self service insurance machine the authors have particularly considered some of the problems that are posed when a comparatively complex mechanism has to be used by ordinary untrained people. The manufacturer's comments are on page 42.

JOHN THIRLWELL
and
BRIAN SHACKEL

1

1 The simple layout of panels within an angle steel frame is a logical solution to the design. The top panel in this Helsinki machine has been purposely left blank for the information and lettering to be completed by the purchaser. The overall dimensions are as follows: height 5 ft 11 inches, width 4 ft 7 inches, depth 12 inches.

2 The improvements in the general layout and appearance of the new machine are clearly apparent when compared with this example of an early model installed at BOAC Airways Terminal, Victoria.

Personal accident insurance machines have been produced by Associated Automation Ltd since 1949. Like any other vending machine, their purpose is to dispense, automatically, a product or service in exchange for coins inserted into the machine. In this case, the machines sell insurance policies to cover accidents to persons incurred during travel.

To the layman, insurance is a complicated matter seldom fully understood. In machines that sell insurance it is therefore vitally important that the operating procedure should be easily understood by the traveller who in many cases will not have used one before.

Ease of operation was therefore a vital consideration when the manufacturer decided to redesign the machines last year. Equally important, however, was the question of appearance both from the point of view of the manufacturer who must sell the machines, and the customer, in this case an insurance broker, who must sell insurance policies. The insurance broker must rely, in fact, on the appearance of the machine to replace the persuasive arguments of the insurance agent. With this requirement firmly in mind Associated Automation consulted the CoID's Record of Designers and Douglas Scott was commissioned to work on the new design in co-operation with the manufacturer's engineers and C. T. Bowring & Co Ltd, the insurance firm which operates the machines in this country.

Basic components

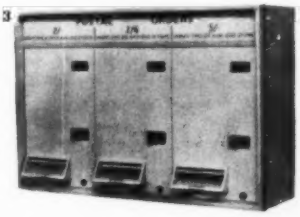
In their simplest terms the basic components necessary are a card dispenser, a writing surface, a time clock and a post box, plus the necessary information and instruction panels which will be discussed later.

The card dispenser is a standard product of Associated Automation and can be adjusted to serve a variety of purposes (such as selling stamped envelopes and postcards, stamp booklets, meal tickets for canteen use, etc) and to receive coins of different denominations so that it can be used abroad. The dispenser therefore remains unchanged from that used in the early machines, except where parts are visible on the outside as in the tray which receives the insurance form. The writing surface is enlarged in the new machine and has been made an integral part of the design instead of what appears to be a last minute addition as on the early version. The time clock is purchased by Associated Automation and is slightly modified from the type used to stamp time cards at factories. Again it remains unchanged from the early version, including the clock dial. Changes in the post box are in matters of positioning and external design.

Construction and appearance

The most striking change in the new machine is in the arrangement of the basic components and in the design of the structure in which the components are housed. The structure itself is simple, consisting of a framework of steel angle pieces welded together with infilling panels of sheet steel, the whole being stove enamelled. The colour schemes are largely dictated by the environment in which the machine will eventually be placed – national colours, for example, or a particular airport scheme, the colour arrangement being worked out to suit the customer's individual wishes.

The framework itself has been designed to a simple module so that the card dispenser units can be built up into different arrangements to suit various conditions, as can be seen in the illustrations **3**, **4** and **5**. This not only means that the infilling panels can become standard elements but it also ensures a continuity of style among the company's machines even though they may be used in different environments and for different purposes. They can, for example, be wall mounted, set into a wall so that the front is flush with the wall surface, be self supporting or stood on a counter top. The simple repetition of coloured rectangles within a frame gives rise to many possibilities in pattern making – it recalls the constructions of Mondrian or the now increasingly familiar patterns of curtain walls. The elements within the rectangles – the knobs, coin slots, form trays, instruction panels – have been carefully detailed and arranged to enhance the sense of order and give a visual unity that is so clearly missing in the earlier machine. The only feature that is out of character is the time clock dial which strikes a strangely old fashioned note among the other immaculately consistent details. It is to be hoped that the designer will have an opportunity to redesign this dial so that it can be brought into line with the rest of the machine. One of the rectangles has an open front and a shelf for



3, 4 and 5 These three examples show alternative arrangements of the basic elements of the new design which can also take standard GPO stamp dispensers.

Covering movements

6 One of the first examples of the new accident insurance machine to be sold abroad. This one has been installed in the airport building at Helsinki. Already BEA has decided to replace its old machines with these new designs: about 30 have been ordered.

personal baggage and parcels – an obvious requirement that nevertheless was not present on the earlier machines.

There is no doubt that the appearance of the new machine is a great improvement on the earlier versions. But what about its operation? DESIGN set out to find the answer to three questions: Is the new machine easier to operate than the old one? Have the designers achieved the optimum arrangement from the user's point of view? What improvements could be made? To find the answers the old and new machines were tried out under normal conditions. The new machine illustrated here and on page 38 was, however, made for the airport at Helsinki where it was installed soon after the photographs were taken. The only new machine installed in Britain is at Gatwick Airport and, apart from minor visual differences, is in all essentials exactly similar. The Gatwick machine was therefore chosen for DESIGN's user analysis.

Ideal ergonomic requirements

In designing such a machine for human operation the following seven points should be borne in mind:

1 The ideal layout leads a person smoothly step by step through the necessary operational sequence; the shapes, sizes, colour and placing of various items will all aid in directing him through the sequence by catching or directing his eye at the right moment in the required way.

2 Instructions should be the simplest possible.

3 Reminders and warnings should not be placed in a lump with the instructions, but at the right point in the sequence.

4 At each stage in the sequence, and therefore at each successive place in the layout, there should be *all* the information and *only* the information required for the operator to make a decision or action.

5 Research and experience have shown that successive items in a sequence should be laid out running from left to right, or downwards, or in a combination of both directions.

6 The layout should lead the operator automatically to the starting point of the operational sequence.

7 When a device is to be used by people without previous instruction it is essential that the general appearance should be such as to inspire confidence.

Layout for convenience

Considered against these guiding principles the old machine falls a long way short of the ideal and serves as a reminder of the progress made in the new design. The immediate reaction to the new machine is that it certainly inspires confidence and will be simple to use. It is clear from the flow diagram, **9**, that the functional layout has been carefully considered and helps the passenger to move from one stage to the next. The instructions are grouped together in simple blocks. But the mistake on the old machine of instructing the passenger to stamp the card before filling it in is repeated in the new one. Whereas this was annoying in the old design because it seemed unnatural, in the new machine it is aggravated by the fact that the whole

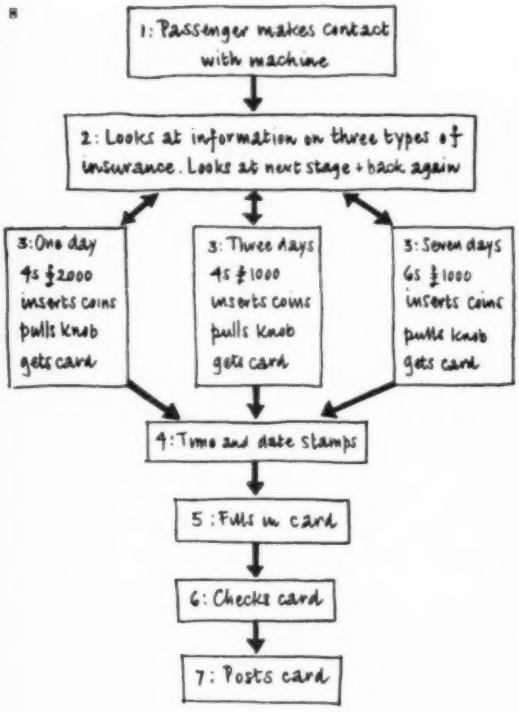
7 Apart from a few external differences this machine, installed at Gatwick Airport, is similar in all essential requirements to the Helsinki model. For convenience it was employed for DESIGN's user analysis.

8 Block diagram showing in a purely schematic way the sequence of operations in the order of the instructions on the new machine. The numbers 1–7 relate to those on actual flow diagrams **9** and **10**.

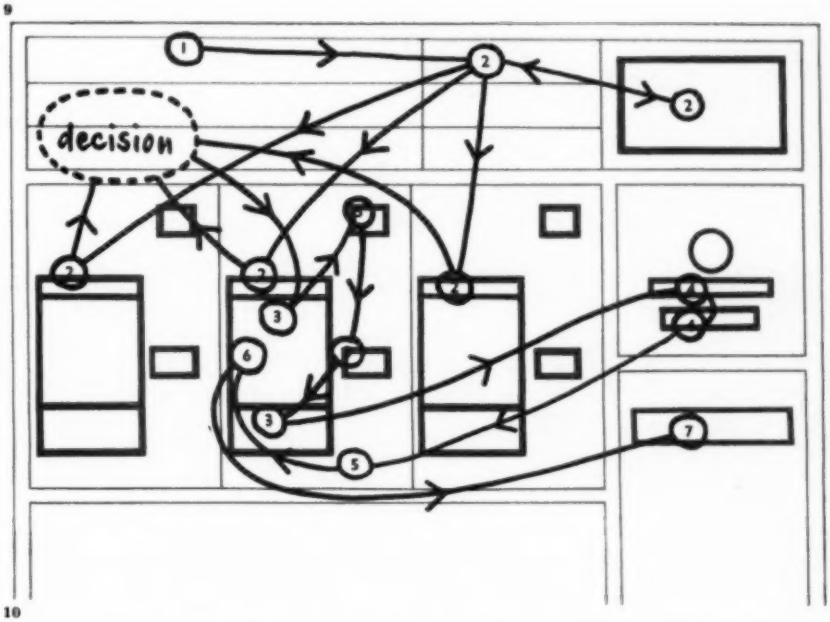
9 Flow diagram showing how the sequence of operations in **8**, actually works on the new machine. This clearly demonstrates the mistake of instructing the passenger to stamp the card *before* filling it in (items 4 and 5 in the schematic sequence).

10 This flow diagram shows how the sequence of operations would be improved if the order of doing items 4 and 5 were reversed and if other improvements suggested in the article were incorporated.

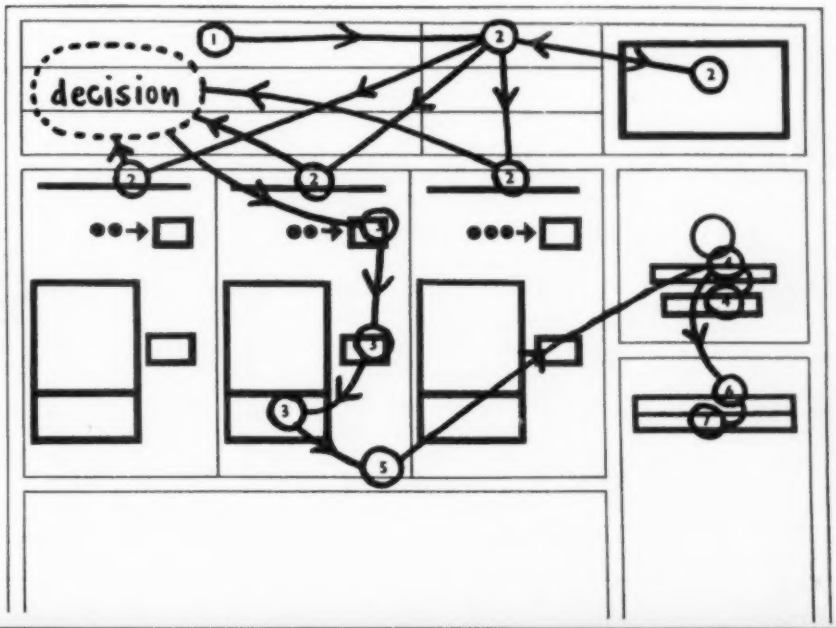
8


1: Passenger makes contact with machine
2: Looks at information on three types of insurance. Looks at next stage + back again
3: One day 4s £2000 inserts coins pulls knob gets card
3: Three days 4s £1000 inserts coins pulls knob gets card
3: Seven days 6s £1000 inserts coins pulls knob gets card
4: Time and date stamps
5: Fills in card
6: Checks card
7: Posts card

9

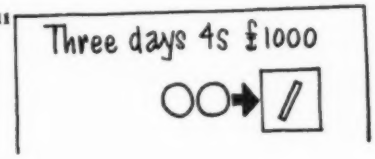


10



11 The link between the general information on the types of insurance available, on the top panel, and the instructions on the use of the machine, on the card dispenser panel, would be improved if the essential details were repeated at the top of each panel in the manner suggested in this sketch. The picture of two florins might assist passengers to find the correct coins from a handful of change. All diagrams in this article were devised by Mr Shackel.

11



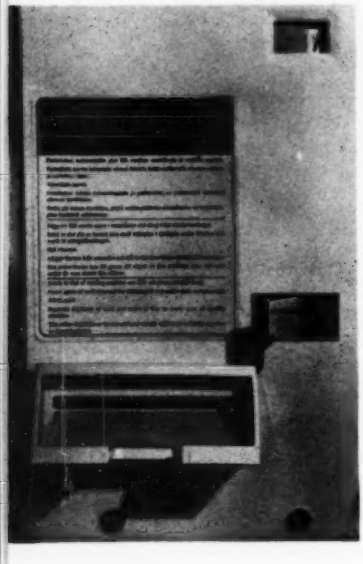
layout leads the passenger to fill in the card *before* stamping it. However, in general the sequence of operations from left to right and then up to the date stamping slot and downwards to the last part is in fact close to item **5** in the list of ideal requirements (page 40).

While the information on age limits at the beginning of the sequence is clear on the new design, so that few passengers of the wrong age find that their insurance is invalid, the detailed information concerning the types of insurance, duration, etc, is still not clear enough, and in some cases is less clear than on the earlier machine. Also the necessary overlap between the detailed information on types of insurance and the instructions for operating the machine, that would be helpful in ensuring an easy flow from one stage of the operation to the next, has not been achieved. A clear heading at the top of each card dispenser panel as in the diagram, **11**, would be a considerable improvement. A picture of the appropriate number of coins, with the reverse face shown to help foreigners, would also be useful in selecting the correct coins from a handful of change.

For date-stamping the card a push down action to the bar, as on a typewriter, would probably be preferable. However, such a change may well be impossible. It might be helpful to change the wording from "Press In" to "Push In" in that the action required is more usually called pushing.

The remaining two critical stages of the operational sequence, remembering to fill in the card and date-stamping it, are not likely to be overlooked because of the way in which this layout guides the passenger through the sequence. However, a note to remind him to check can do no harm and might well avoid some of the occasional slips. But its placing is vital. Even close alongside the post box slot is unlikely to be adequate unless it is so dominant and eye catching as to unbalance the appearance and sequence of the whole machine.

12 The careful detailing is apparent in this close up of one of the card dispenser panels on the Helsinki machine. The design of the instruction panel has been standardised, but the order of the instructions is criticised in the accompanying article.



One solution would be to give the post box slit a lift up or push through flap, not large enough to cover the whole opening and disguise the fact that this is the post box, but large enough to cause the person to look at it in order to move it out of the way.

The following would probably suffice:

	signed	
Have you	addressed	the card?
	date-stamped	

With the above suggestions incorporated the flow sequence would be as in the diagram **10**, which can be seen to be a definite improvement on the existing flow sequence of the new machine, **9**.

Consistency and simplicity of wording is vital. On the old model we see 'certificate' and 'coupon' used in different places for the same thing and on the new model 'card' and 'ticket'. 'Card' is simplest and shortest and therefore probably best.

Conclusions

The criticisms and suggestions that have been made are comparatively small, individually, when seen against the conception of the new machine as a whole. The policy of the manufacturer in recognising the need for good design in a product that is encountered by relatively few people can only be applauded. The skill of the designer in transforming a machine that many might consider adequate for its purpose into something that has elegance and distinction in its own right reinforces the argument that the industrial designer has a valuable and sometimes unexpected contribution to make to our environment. The criticisms are nevertheless important, and in concentrating on the user, and in studying the problems that are encountered in operating the machine, we have tried to draw attention to the psychological problems that must increasingly be taken into account when designing for people.

The manufacturer comments

As one of the principal manufacturers, in this country, of self service coin operated mechanisms, including the insurance vending machine described here, we are very conscious of the need for the continual design review of our products to ensure that they are kept up-to-date with modern trends and requirements.

When a product has a good or even an increasing sales potential, it is so easy to be complacent and retain an out-of-date and inadequate design, thus overlooking the possibility of enhanced sales which could result from a more efficient and appealing design.

It is vital in both manufacturing and selling to keep abreast with developments if a product is to retain its existing markets and to extend the field of application and appeal.

In the independent survey which the authors give in their article, some functional and design criticisms have been expressed. These are, of course, valid to some extent and we have noted them.

With regard to the sequence of operation to which some emphasis has been given in this article, the reason the user is directed to date and time stamp his coupon before addressing it is to ensure, as far as possible, that this is done immediately before posting. A reversal of this procedure could lead to the omission of the timing and dating of the coupon, which would then render it invalid.

A new design, whether it is the outcome of a single person or a number of contributors, has to be a compromise, firstly between what is ideal and what is practical or artistic for a given set of conditions, and, secondly, between what the manufacturer would like to do and a sales value at which it is economic to offer the product to the customers.

It is not possible in any design to incorporate every request or criticism offered by the parties interested; it must be an intelligent compromise not only to meet as many as possible of the conditions known or anticipated, but must take account of the fact that most products have more than one customer.

Handling opinions

Professor Zdeněk Kovář, the Czechoslovak designer and teacher, came to The Design Centre during a recent visit to this country. Professor Kovář is best known for his specialist work on the design of handles for a variety of tools and industrial equipment. (DESIGN October 1956 pages 48–52). But he also designs domestic and engineering products to which he gives an organic quality that is quite distinct from the styling approach of American and some British work. Although he has been described as a leading exponent of the ergonomic method, his approach is, in fact, essentially intuitive, with aesthetic considerations playing an important part. Asked to comment on the systematic design method described in the student project on pages 49–52, he said he felt this was valuable as a starting point and that extremely interesting and unusual results had been achieved. But he thought that the cutlery samples lacked the unity and refinements that the industrial designer, trained to appreciate aesthetic matters, would be able to provide. He felt therefore that a further stage of development would be needed.

Professor Kovář was also asked to comment on a variety of handles on British products shown in The Design Centre. His views on two of them are recorded in the captions to the illustrations.

1

2

1 The comfortable feel of a handle is more important in a tool that is being used eight hours a day than in a domestic article. This plane by William Marples & Sons Ltd Professor Kovář considered to be excellent mechanically, though a little too heavy for its size. The rear handle, which he said is used primarily for holding the plane during its stroke, is good, but he criticised the front knob. The main pressure for the stroke is applied by the right hand and the knob should therefore be shaped to fit the palm of the hand.

2 Professor Kovář considered that this steak knife by Joseph Rodgers & Sons Ltd was by far the most interesting piece of cutlery on show in the Centre. He admired the smooth transition from handle to blade and liked the broad flat area on which the forefinger could press without causing the knife to turn over in the hand.

Textile machinery: competition raises standards

DAVID BRUNNSCHWEILER

Faced with keen competition from the Continent, British manufacturers of textile machinery are realising that appearance, as well as performance, matters. The author, who is lecturer in weaving, Manchester College of Science and Technology, analyses British trends in the following article.

1952 was a record year for British textile engineers. Production was valued at over £78 million, of which exports exceeded £50 million – both figures representing an unprecedented achievement. Since 1952, however, the value of production has fallen to about £70 million and exports to about £40 million. During this period the production and exports of important competitors such as Switzerland and Western Germany have been rising at an ominous rate. Are these trends likely to continue, or can British textile machinery makers regain their outstanding lead of seven years ago? There may perhaps be an optimistic answer to this question, judging from the *International exhibition of textile machinery*, held in Manchester last autumn, and from the reports of several of the leading manufacturers, who were interviewed for this survey.

Textile machinery covers a diversity of processes ranging from the cleaning of raw fibre to the production of finished fabrics and garments. The principal divisions of spinning, weaving, knitting, finishing and sewing are all essentially dissimilar operations requiring specialised equipment, the market for most of which is very competitive. Probably 70 per cent of the machines are sold primarily on price, such is the superficial similarity of textile machinery produced in different countries in the world.

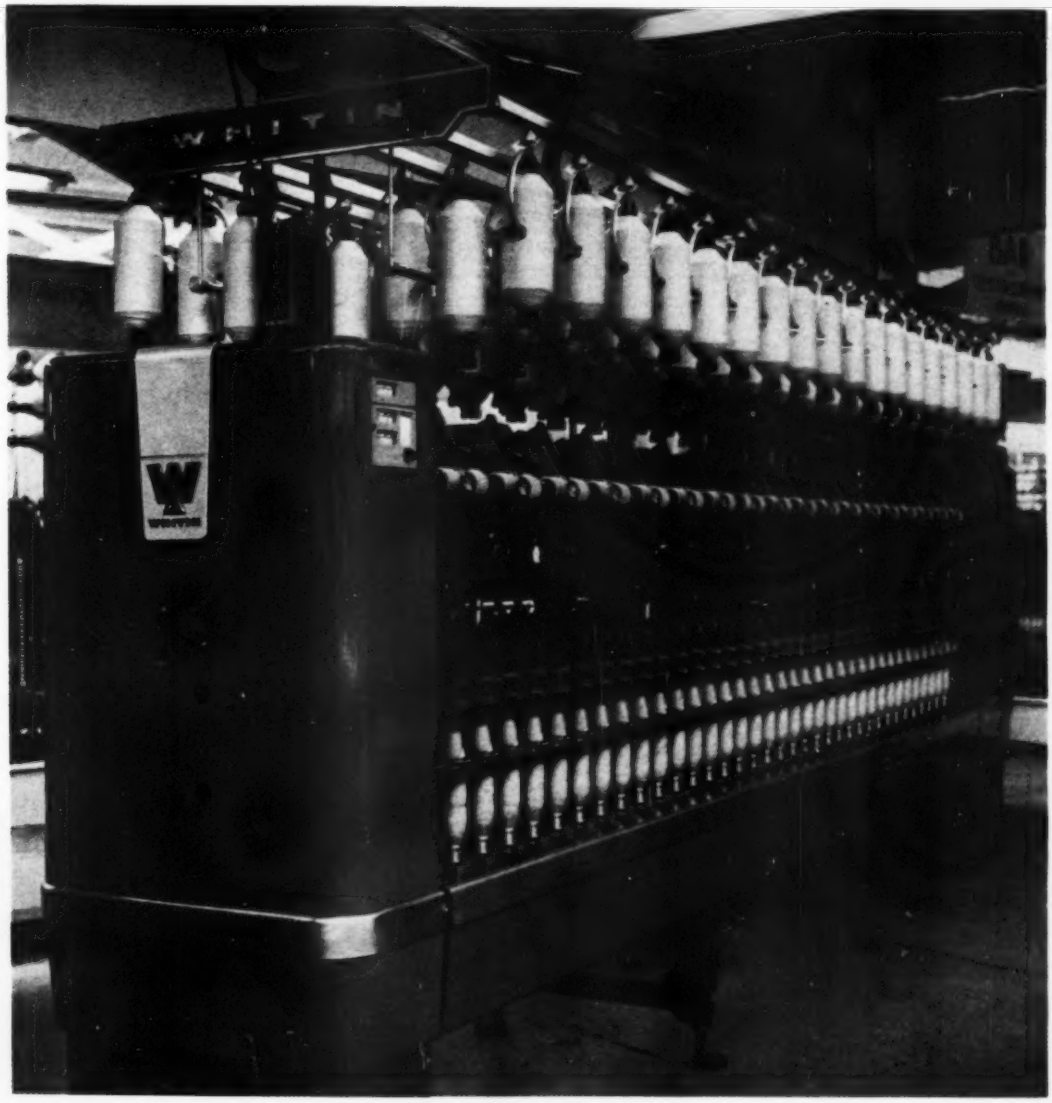
British knitting machinery is generally of advanced technological design, so that it is no coincidence that in this group production and exports are continuing to rise. In the other groups where British production is either static or in decline, many important technological developments have originated abroad, especially in the USA and Switzerland. While machinery makers can hardly be blamed for the low standards of many of their customers, it is significant that those firms that have always kept ahead in technological developments, and have produced high quality machines where first cost is not the only incentive to purchase, have continued to prosper. It is the companies that have been willing to make machines to the minimum requirements of customers, whether at home or overseas, that are now meeting the strongest competition.

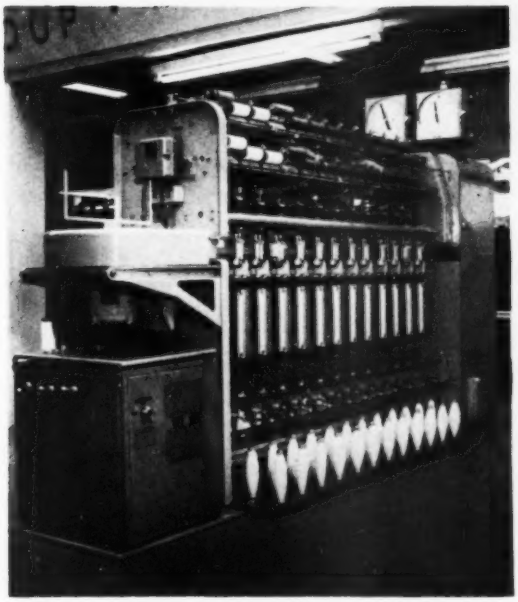
The larger textile engineering firms show their equipment at least once a year at international exhibitions held in different European countries, as well as at exhibitions in Asia and America. Manchester was chosen for important exhibitions in 1949, 1953, and in particular, 1958. In 1949, the contrast between British and Continental machines was extreme. The Continental machines were usually of better engineering design, construction and appearance, as well as considerably more expensive than their conservative British counterparts. This did not appear to cause any concern to the British industry, as sales were running at a high level, and were continuing to rise. By 1953, however, a sharp fall in sales had occurred, and more interest was shown in European and American machines which were selling to the textile industry in Britain.

It was apparent at the 1958 exhibition that a radical change had taken place. It was no longer possible to distinguish between British and foreign machinery by casual inspection. On the contrary, most British machines shown were of modern construction, and frequently of superior finish. Thus, within the last five years, British textile engineers have started to regain some of the initiative previously lost to foreign competitors. If this initiative can only be maintained for a further five years, increased production and exports are certain to result. However, competitors abroad are not likely to relax their own efforts, and customers will increasingly prefer machines whose appearance matches their performance.

Textile machinery makers, both at home and abroad, have been conspicuously slow to appreciate the work of industrial designers. Apart from certain firms that obviously take a pride in the appearance and finish of their machines, and encourage their drawing office staffs to produce compact, functional equipment with carefully planned controls, inadequate care has been given to producing machines which are pleasant and easy to work with in the mill, and compel attention on the exhibition stand. Some firms have had professional advice on the use of colours and paints, but so far as is known, only one firm (American) has employed the services of a consultant industrial designer, **2**. It is clear that British companies could considerably improve their products at the expense of competitors, and at relatively little financial cost, by encouraging their engineering designers to produce more imaginative looking machinery, and by calling in expert consultant designers periodically.

It is somewhat ironical that, by their nature, many





spinning

1 Hartford *High production comber* for removing short fibre from cotton supplied on laps. *Perspex* casings cover the combs in front of the laps. The smooth top of the control unit is made from glass reinforced plastics. MAKER *Platt Brothers (Sales) Ltd.*

2 The Whitin *model K* ring spinning frame which has been designed to occupy 25 per cent less floor space than conventional models. The styling of the end casing which houses the machine controls has a newly designed name plate and incorporates the production counter. DESIGNER *Raymond Loewy Associates.* MAKER *Whitin Machine Works, U S A.*

3 *Crimpspin* machine for the production of crimped nylon and *Terylene* yarns. This very advanced machine has electronic temperature control of the heaters. While the housing for the electronic equipment has been designed to fit within the limits of the machine frame, the conflict between the style of the machine and the control case is unfortunate. MAKER *E. Scragg & Sons Ltd; electronic equipment by Fielden Electronics Ltd.*

textile processes look attractive in spite of poor machine design. In spinning and winding, large numbers of identical spindle units are grouped together to form one frame, the parade-like regularity of the spindles forming a natural contrast to the control unit at the end of the machine. Warping processes invariably catch the eye by the converging to a point of many hundreds of threads drawn from a creel of bobbins. In cloth making and finishing, the warp beams and the cloth rollers form an inherent feature of the processes which is too seldom exploited in the design of machines.

Inattention to detail

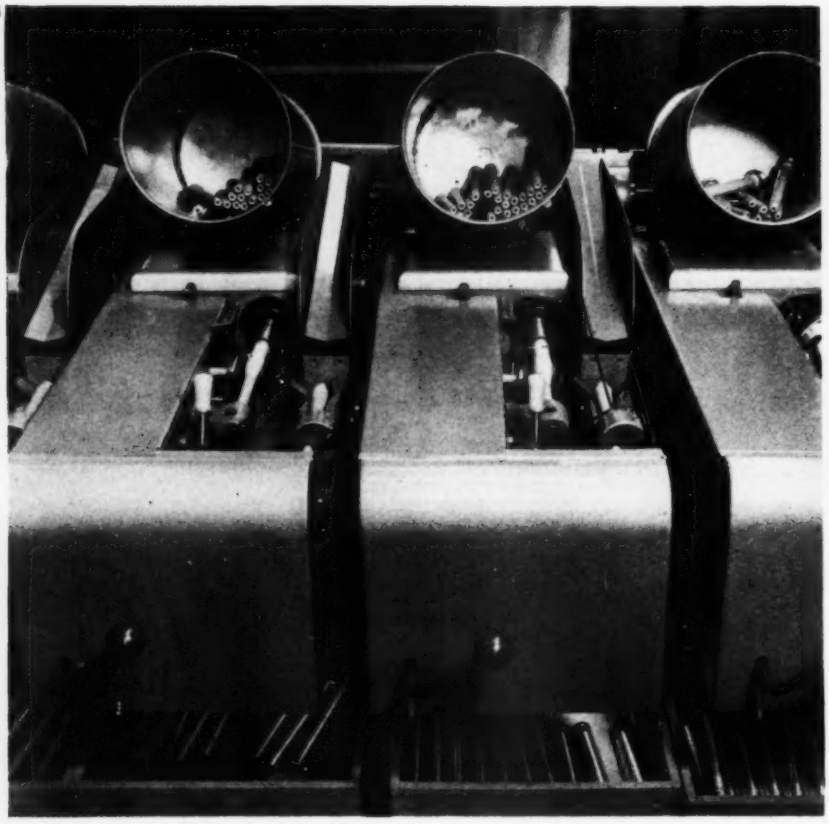
Numerous good designs of machines are spoilt by inattention to detail, particularly the location of electric motors, switchgear, counters, dials and similar components. On machines where the operator is not normally required to stay continuously in the same position, it is not always desirable to group controls and indicating dials together, but this cannot excuse switches and associated controls of unsuitable character being fastened to equipment, apparently as an afterthought. Where all-electric controls are fitted, no manufacturer appears to have consulted a specialist on the design of push-button panels which can be operated by touch, without the need to select buttons by colour or title. All of these points can determine whether or not a machine is sold, and important improvements could be made at relatively small expense.

Much work study is used in textile mills for the determination of operator loading and optimum machine deployment. In view of this, it is almost unbelievable that so many machinery makers should be insensitive to the benefits to be gained from constructing equipment around the requirements of operators. Where work studies have been used in the design of machine parts, **5**, improved conditions for operators and management alike are obtained. The recently announced support of the National Research Development Corporation for work at the British Cotton Industry Research Association, to increase operative productivity in cotton spinning, is most welcome but why should such work be confined to cotton spinning?

In conclusion, the present stage of development of textile machinery, both British and foreign, is very similar. With a sustained effort to combine improvements resulting from technological research and work study with imaginative machine design and appearance, British textile engineers could be in a position to take the initiative away from foreign machinery makers in all textile groups. If the present trend noted at the Manchester exhibition continues, the home industry could once again become the dominating influence in world textile machinery markets.

Photographs 1, 3, 4 and 9 by Sam Lambert

4



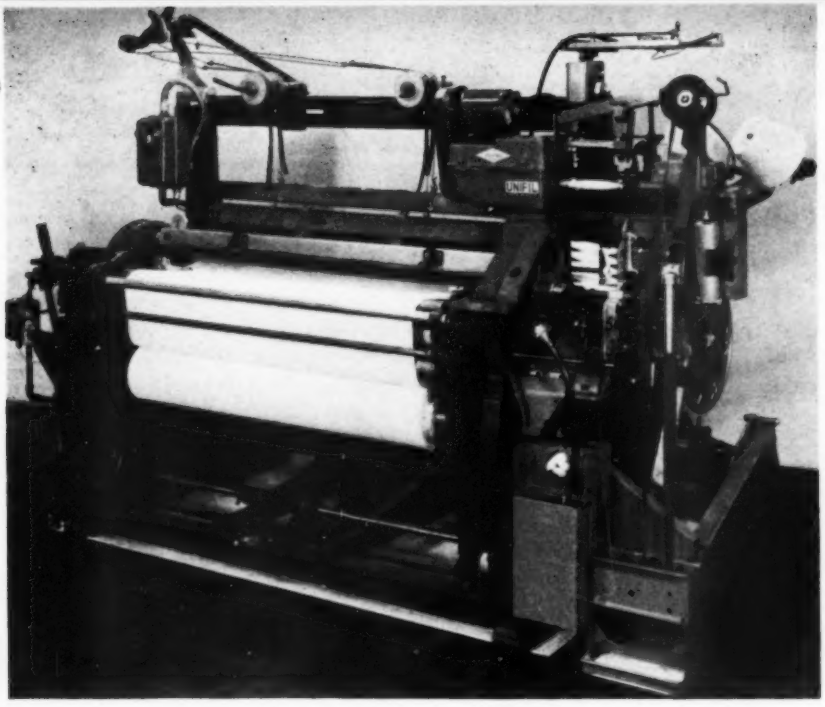
5

yarn preparation

4 Automatic pirn winding machines wind weft bobbins which are used inside shuttles. The empty pirn is placed in a hopper, whence it is automatically wound and placed in a tray or box ready for transport to the loom. On this machine each winding spindle has its own hopper. MAKER *Muschamp Textile Machinery Ltd.*

5 A winding machine should permit the operator to locate and knot the yarn as easily as possible, and threading should be completely automatic. The Schlafhorst *BKN* cone winder is an example of a machine which has been primarily designed with the needs of the operator in mind. MAKER *W. Schlafhorst & Co, West Germany.*

6



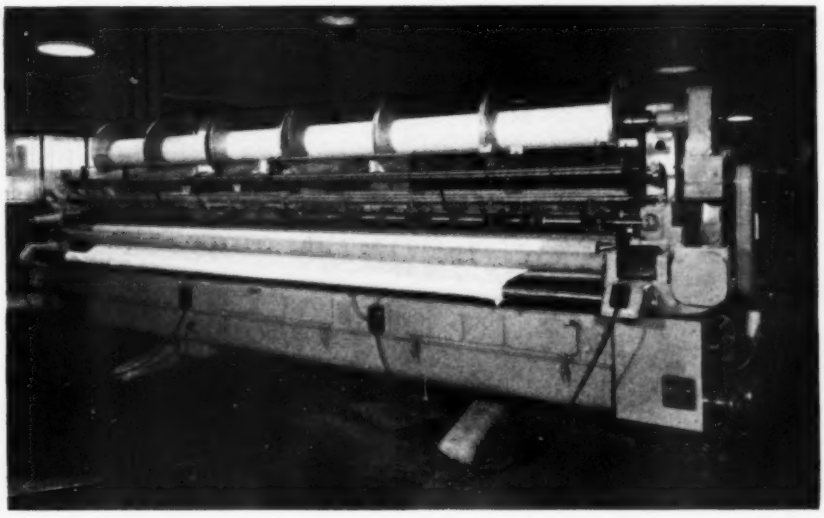
7

weaving

6 An example of a complex machine which is technologically – but not visually – successful; a British Northrop loom has been fitted with a *Unifil* automatic pirn winder made by the Universal Winding Co, USA, to produce a self-contained machine requiring virtually no attention from the operator. This equipment was shown for the first time in Europe at the 1958 Manchester exhibition.

7 Unconventional shuttleless looms which are fed with weft yarn supplied on cones have been introduced for simple fabrics. On the *Kovo* loom the weft is inserted by means of an air jet. The loom is, however, overstyled, and both the warp beam and the cloth roller are unnecessarily concealed. MAKER *Kovo, Czechoslovakia.*

8



9

knitting

8 Among the most important developments of the last 10 years has been the increase in the production of knitted fabrics of all types. This warp knitting machine is impressive both technologically and visually. A 14-ft wide fabric is knitted from two sets of beams located at the back of the machine. The main frame is a single casting below which is an oil sump casing. The method of supporting the machine on two legs, rather than continuing the main casting to floor level, is unusual and effective. Some tidying up of the course counter, oil pressure gauge, speed indicator and other small parts might be achieved. MAKER *FNF Machinery Manufacturing Co Ltd.*

finishing

9 The process of raising the surface of a fabric has always been a difficult one to control. On the *Auto-Zero* machine a complicated system of adjustment has been incorporated in a particularly carefully designed panel involving gauges, light indicators, control knobs and push buttons. The fake automobile style letters are deplorable. MAKER *Tomlinsons (Rochdale) Ltd.*

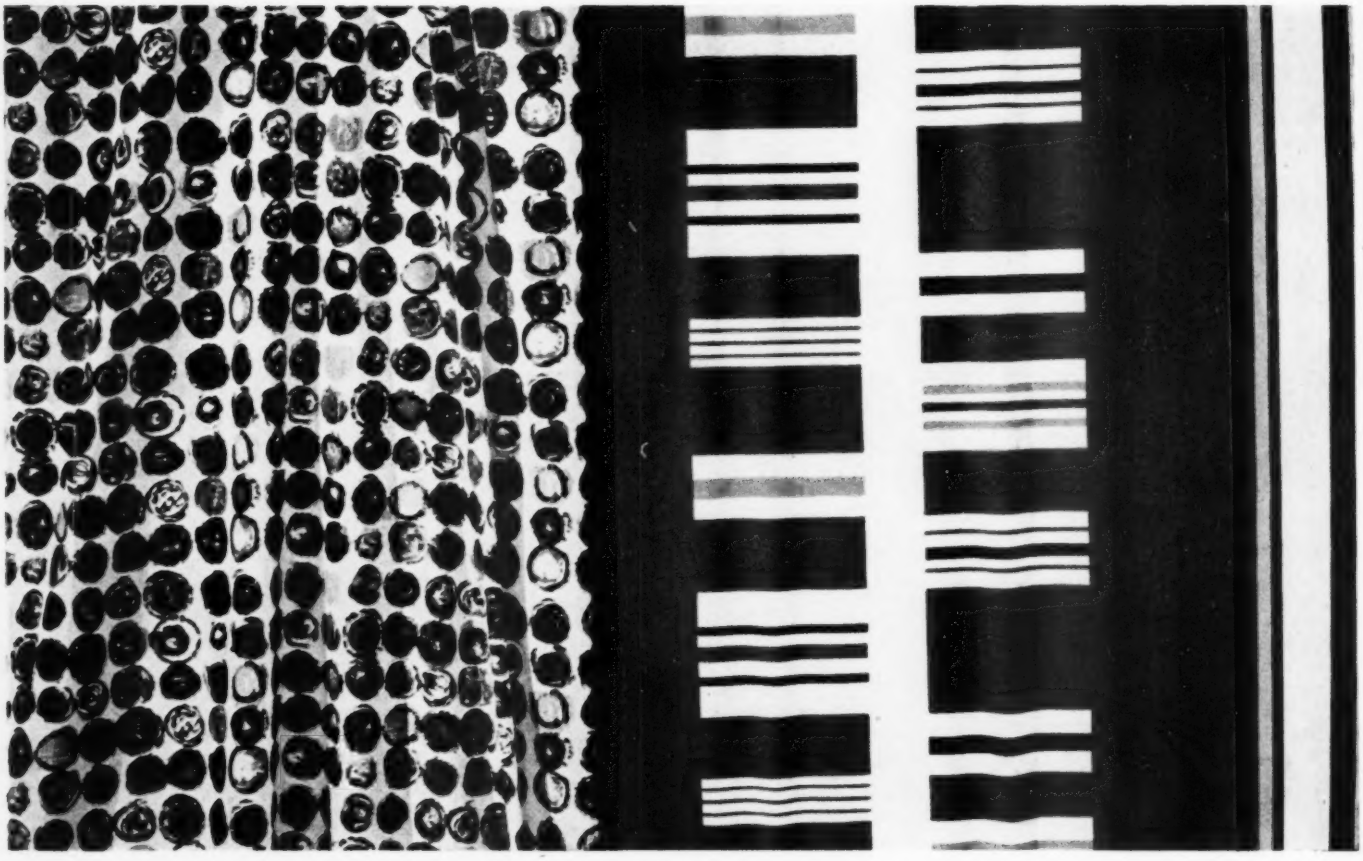
The stream revitalised

The remarkable regularity with which Heal Fabrics Ltd has launched its annual range of furnishing fabrics has acted as a series of punctuation marks in the evolution since the war of modern British textiles. Last year's range represented a dramatic break away from what many had regarded as an established Heal's style. Where would it lead? Some of the answers are provided in this year's collection.

Most significant is the large proportion of machine printed designs – nine roller prints and five mechanical screen prints out of a total of 19 new patterns – a strong re-affirmation of Heal's confidence in the rapidly expanding market for modern textiles at low prices, both at home and abroad. Essentially the new range is a consolidation of the new ideas developed last year and in previous ranges. The patterns continue to be large in scale with a dominance of freely drawn motifs on white grounds. It is as if Heal's had collected together all the currents of its past achievement in order to re-establish the main stream – a stream in which last year's experiments have now been absorbed.

This is sensible from every point of view. One cannot break away all the time for it will soon become apparent that there is nothing permanent to break away from. The effect would be like the sameness of a suburban street in which every house is different. The Heal's approach is reflected in the choice of designers. A few names recur from year to year, but there are always new ones to give fresh life and vitality to the stream.

J.E.B.



Two roller printed fabrics from Heal's new range. Left, *Ducatoon* by Lucienne Day, five colourways, 11*s* 9*d per yd*; right, *Stanza* by Paule Vézelay, four colourways, 11*s* 9*d per yd*.

Lucienne Day has designed furnishing fabrics for Heal's regularly since 1950, and has six designs in this year's range. She also works for German, American and Norwegian markets and is currently engaged on designs for wallpapers, carpets, china decoration and table linen. She finds that her fabric designs are becoming progressively simpler and bolder each year.

Paule Vézelay has two designs in the range and has designed for Heal's for the past five years. She made her first new textile designs in 1944 for the Etudes Répresentation de la Société Industrielle de la Lys, Paris. She sometimes achieves her powerful effects by collage, cutting out the shapes she requires with scissors. She has been a non-figurative painter since 1928.

Photos by Sam Lambert

Consumer needs 14

A systematic design method

The following article describes a logical method of designing that could have applications in most industries producing durable consumer goods.

These examples of cutlery, designed by evening students at the Regional College of Art, Manchester, are shown full size on page 51. The course ended before the work was completely finished; for example the handle to the spoon had not been designed.

The importance of a constructive approach to the training of product designers is self evident. In schools of art in this country differing attitudes to training exist and no generally accepted policy has emerged. Pre-occupations with traditional study, aesthetic exploration or production engineering show in various courses. The following exercise in design is an example of a different method, a systematic analytical approach, from the user's point of view, which is being tried out at the school of industrial design at the Regional College of Art, Manchester.

It is thought that this method can be applied to the design of any industrial product. In a first trial of the method a class of third year design students was given the task of relating the shapes of knives, forks and spoons as closely as possible to the actions for which they are used. This example was chosen because the detailed analysis of user behaviour, on which the method depends, could be made without going outside a classroom. The project appeared recently on Northern BBC television, in the programme *Outline*.

the problem

This is to discover useful changes that can be made to the shapes of table forks; table knives; dessert forks; dessert spoons.

the method

This is based on observation and analysis of the actions for which the product is intended and not on the feelings of designers or users. The sequence followed was:
Stage 1 Find tool actions for each food.
Stage 2 Find tool shapes for each action.
Stage 3 Find tool shapes for the groups of actions performed by each utensil.
Stage 4 Find handle shapes for each utensil.
Stage 5 Test the new designs and report their advantages and failings.

stage 1 *to find tool actions for each food*

The foods eaten with these utensils are classified according to their effects on tool shape. The actions for each type of food are classified on chart 1, page 52. The groups of these actions which are performed by each utensil are recorded on chart 2, page 52.

stage 2 *to find tool shapes for each action*

Traditional and experimental tool shapes were tried out for each action with each type of food. Defects in the traditional tool shapes and requirements for improved tool shapes are noted on chart 3, page 52, and on similar charts for the other utensils.

stage 3 *to find tool shapes for the groups of actions performed by each utensil*

New shapes were derived systematically from chart 3 and similar charts. These shapes were refined by further trials and experimental meals. (See chart 3, page 52.)

stage 4 *to find handle shapes for each utensil*

First the areas in contact with the hand were roughly fixed by trials with approximate shapes. Then the contact areas were more precisely fixed by successive trials in hands of various sizes for each action. (See diagram A, page 52.) Finally the parts between contact areas were designed by

eye (because there is no further information to go on) and in a manner appropriate to the material used. The linking of the contact areas offers some freedom of aesthetic decision to the designer. (Compare the contact areas in diagram A with the photograph of the knife opposite by holding the page up to the light.)

stage 5 *to test the new designs and report their advantages and failings*

Each utensil was given a performance trial at real and experimental meals. The criticisms can be summarised as follows:

Table knife

The straight blade in contact with the plate performs much better than does the conventional shape, but the sharp corner might with advantage be curved.
The knuckles are still a little too close to the plate edge.
The hollow under the handle may be too deep.
Some users do not place the first finger in the designed position for downward pressure.

Table fork

The change in direction of the prongs is an ingenious means of overcoming the conflicting requirements for holding, spearing, scrape loading, carrying solids and carrying peas. Unfamiliar users take some time to learn the twisting motion of changing from spearing with the prongs to scraping with the flat end. Once learnt this seems less troublesome than the various ways of adapting conventional forks to lifting solids and peas. The simple handle is reasonably satisfactory and is well suited to the twisting motion. There seems to be no provision for eating spaghetti.

Dessert spoon

The new design is not a definite improvement over the conventional design. It is better in some respects and worse in others:
Better *for pushing, digging, scraping and cutting.*
Worse *for scooping, sipping and biting.*
(A straight handle was fitted as the class ended before the analysis for this component was finished.)

Dessert fork

The tool shape is better than the conventional one for the two intended actions of pushing and holding down while the spoon cuts. The abandonment of the dessert fork as a means of carrying food to the mouth implies some changes of custom.

These criticisms may suggest that the method is far from infallible. The exponents of the method consider that it is not at fault and that errors in the final shapes could have come from two sources:
1 Logical and factual mistakes in carrying out the method. These are to be expected with a class of students working in this way for the very first time.
2 Insufficient time to continue experiments until errors become insignificant. In this case experimental work was simplified and stopped at an arbitrary point so that some tangible results could be obtained before the end of a short evening course.

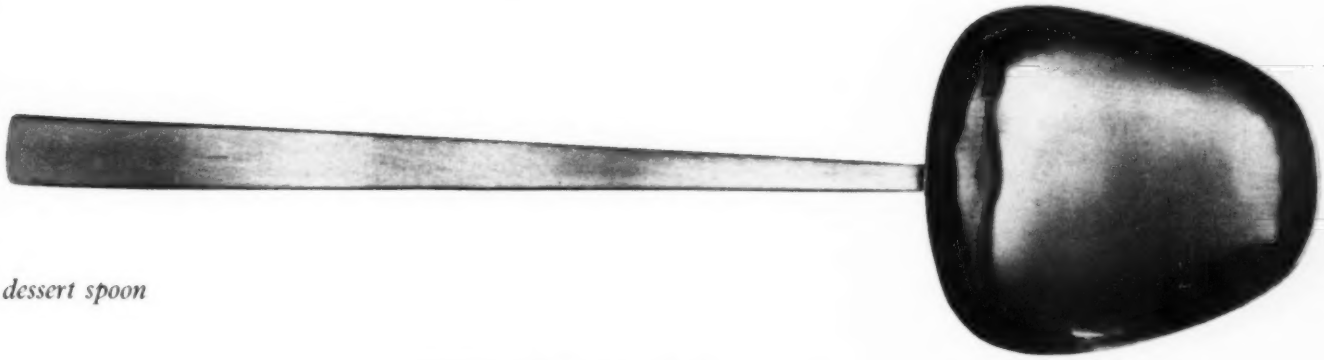
systematic and intuitive methods compared

This systematic method of relating product shapes to the requirements of use is an alternative to the usual method of designing largely by eye. The differences between the two methods are outlined below.
At the beginning of the class each student designed a set of utensils wholly by eye in about one hour.
The analysis described here led to wholly different shapes and took about 50 hours.
A natural first reaction to such an exercise could be that it was elementary and hardly necessary for such familiar objects as knives and forks. The fact that the uses of the table fork and the dessert fork are so different as to warrant entirely different shapes shows how necessary such analysis is. Traditionally these forks are merely size variants of the same form, though they may well have been suitable for the eating habits of another century.

Design by eye	*Design by systematic analysis*
quick	slow
cheap	costly
depends on long experience	once the method has been learnt it can be applied to any product without practical experience
success or failure can only be discovered after the financial risks have been taken	success or failure can be evaluated before financial risks are run
is brilliant or feeble according to the talent of designer	enables average talents to achieve a reliable answer
can only be done individually	is suited to collaborative work
depends on a talent which can be encouraged but not taught	is very teachable
permits expression of personal feelings of designer – often at the expense of performance	achieves best possible performance and leaves room for personal expression at certain points

table knife

table fork



dessert spoon

dessert fork

Diagram A. This diagram shows the areas of contact with the hand in the table knife handle which were worked out experimentally. The space between these areas allows some aesthetic freedom. Compare with the actual knife handle by holding the page up to the light.

These charts are from a series which classifies the students' investigations into the actions needed for each type of food (chart 1), the actions performed by each utensil (chart 2), and some of the defects of traditional tool shapes and ways of improvement (chart 3).

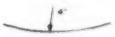
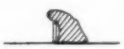
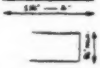
CHART 1

			PREPARE					LOAD								CARRY				AT MOUTH		
TOOL ACTIONS			CUT SAW	CUT DOWN	PUSH	HOLD/CUT SAW	HOLD/CUT DOWN	WASH	DIG LOAD	SPEAR LOAD	SHOVEL OR FLAT	SHOVEL OR CURVE	TRANSFER/SHOVEL	TRANSFER/SQUASH	SCOOP UP	BY SPEARING	BY LIFTING SHOPS	BY LIFTING PAD	BY LIFTING LIQUIDS	BITE SPEARED FOOD	BITE LIFTED FOOD	SIP
FOODS																						
TYPE OF FOOD																						
MAIN COURSE	CRISP	Toast		•	•		•				•	•					•				•	
	CRUMBLY	Pastry		•	•		•				•	•					•				•	
	TOUGH	Meat	•		•	•				•						•	•			•		
	SOFT	Potato		•	•		•	•			•	•	•	•		•	•	•			•	
	SEMI-SOLID	Mash			•			•	•		•		•	•			•				•	
	SEMI-LIQUID	Mince			•						•		•	•			•				•	
	LIQUID	Gravy			•			•			•		•						•		•	
DESSERT	CRISP	Cereal		•	•		•				•	•					•				•	
	CRUMBLY	Pastry		•	•		•				•	•					•				•	
	SOFT	Puddings		•	•		•		•		•	•					•				•	
	SEMI-SOLID	Ice-cream		•	•		•				•	•					•				•	
	SEMI-LIQUID	Rice-pudding			•				•		•	•			•		•				•	
	LIQUID	Custard									•	•			•				•			•
	FLOATING SOLID	Stewed fruit			•										•		•				•	•

CHART 2

	PREPARE					LOAD								CARRY				AT MOUTH		
TOOL ACTIONS	CUT/SAW	CUT DOWN	PUSH	HOLD/CUT SAW	HOLD/CUT DOWN	WASH	DIG LOAD	SPEAR LOAD	SHOVEL OR FLAT	SHOVEL OR CURVE	TRANSFER/SHOVEL	TRANSFER/SQUASH	SCOOP UP	BY SPEARING	BY LIFTING SHOPS	BY LIFTING PAD	BY LIFTING LIQUIDS	BITE SPEARED FOOD	BITE LIFTED FOOD	SIP
UTENSILS																				
TABLE KNIFE	•	•	•				•		•		•	•								
TABLE FORK				•	•	•		•	•		•	•		•	•	•		•	•	
DESSERT SPOON		•	•				•		•	•			•		•		•		•	•
DESSERT FORK				•		•														

CHART 3
TABLE KNIFE

TOOL ACTIONS	FAULTS OF CONVENTIONAL TOOL	REQUIREMENTS FOR NEW TOOL
CUT SAW	Blade unnecessarily long for present-day meals when meat has already been carved. Plate edge prevents use of a sufficient length of blade for sawing on plate.	Blade length required Whole sawing edge must be in contact with flat surface of plate Minimum radius of cutting edge  Blade must be straight when viewed from above
CUT DOWN	Tilted blade leaves uncut portion each side. 	Flat edge to be in contact with plate
PUSH	Semi-solid food falls over top of blade. 	Height of pusher Height at ends to be at least equal to height in centre to prevent food falling over top Width of pusher
DIG LOAD	Food falls off edges of blade tip.	Blade width required at end
SHOVEL OR FLAT	Tilted and curved blade leaves portions each side. 	Flat edge in contact with plate Blade height 
TRANSFER BY SCRAPE TO FORK	Satisfactory.	Length required Width required
TRANSFER BY SQUASH TO FORK	Satisfactory.	

USA Training product designers

ERIC G. CLEMENTS

In April last year DESIGN *discussed some of the problems affecting the training of product designers in Great Britain. The following article looks at the methods and approaches developed by educators on the other side of the Atlantic. The author, himself a designer and teacher, recently visited over 20 American design training centres on a Ford Foundation English-Speaking Union grant.*

Design training departments in the USA have evolved in three different types of educational institution: art schools (as in Britain), engineering institutes and universities, the last two of which have no parallel in educational organisations here. In general, the nature of the institution has an influence, sometimes marked, on the approach to design education. The five design training institutions whose work is shown in this article were chosen from over 20 visited because they include these three basic types and also because we can learn from them much of value in the development of our own educational methods.

Of particular importance is the association of design training departments with the work of universities. At the universities of Syracuse and Illinois, for example, the designer is encouraged to consider his work in a broad social context. Ideally, he serves in the fullest sense as the aesthetic and social conscience of industry, and must be prepared to give society the best product possible within the means at his disposal.

Comprehensive engineer

A more technical bias is evident at the engineering institutes such as the Illinois Institute of Technology and the Pratt Institute. It is perhaps significant that students at the IIT qualify with a Bachelor of Science degree as distinct from the arts degrees given in most American training centres. This means that students must spend a greater proportion of their time studying science subjects in order to qualify. The concept of the 'comprehensive engineer' is a pointer to the type of designer which the Institute considers will best serve the needs of industry. At Pratt design is seen as an activity closely associated with present day technology, economics and social patterns. Both institutes are primarily concerned with genuine product improvement by solving experimental problems.

In some ways the Art Center School in Los Angeles is the closest equivalent to the British art school among the design training departments considered here. It was set up privately in 1932 to train students in the industrial and related arts, and to draw upon parallel professional practice to the greatest extent possible. It differs from British schools, however, in the degree of emphasis given to the professional standard of the work, and one wonders how much is sacrificed by the encouragement of skill in such things as industrial rendering, layout and presentation, packaging and display, to the exclusion of academic subjects and liberal studies.

Lessons for British schools

It was considered essential by all the educational establishments visited for some members of the faculty to be practising designers. The leading institutions, like Pratt, IIT, Illinois and Syracuse universities also employ part-time members from industry and are visited by leading free-lance designers such as Henry Dreyfuss (University of California), Raymond Spilman (Georgia Institute of Technology), Dave Chapman, (IIT), and so on.

The progress that is apparent in American design education methods suggests that a number of subjects to be found in the curricula of American institutions could, with benefit, be incorporated in courses at British schools and colleges. The Americans have found it valuable to include courses on the business aspects of the designer's practice, including such subjects as designer/client relationship, the legal protection of designs, office management and taxation. Students also study the principles of market research and its influence on the designer's approach, pricing problems, cost analysis, production planning and the fundamentals of company management. Applied psychology is becoming of increasing importance and is recognised both as an element in marketing and also as a necessary clue to

the basic user requirements of a product. The inclusion of liberal and scientific studies has already been mentioned and it is interesting that the Royal College of Art, London, has seriously begun to tackle this problem by introducing a course of general studies under the direction of Basil Taylor.

The most significant common factor in the American curricula is the almost universal four-year course; Syracuse has gone further by introducing a five-year course with extremely interesting results. It is difficult to see how British schools could absorb the extra subjects mentioned above without extending the courses by at least one or two years. Even were this to be achieved, few art schools or colleges in this country would have the facilities that are afforded in America by the close relationship between the design schools and the universities or technical institutes. There is a strong case for establishing faculties in industrial design at British universities leading to a BA or BSc degree, since the present NDD has little standing outside the art school. Where this cannot be achieved, colleges of technology might usefully contribute to the education of art school-trained designers by arranging supplementary courses in such subjects as applied mathematics and physics.

1 Model of a 42-ft sailing boat designed and made by a group of students. Complete detailing of the interior was included in the project.

2 The interior of this car incorporates an unconventional steering mechanism to replace the normal steering wheel. DESIGNER *Kadry Raghet, a student from Egypt.*

3 Clay model of a utility scooter designed around a basic scooter chassis and with a delivery section in front. DESIGNER *A. L. Colver.*

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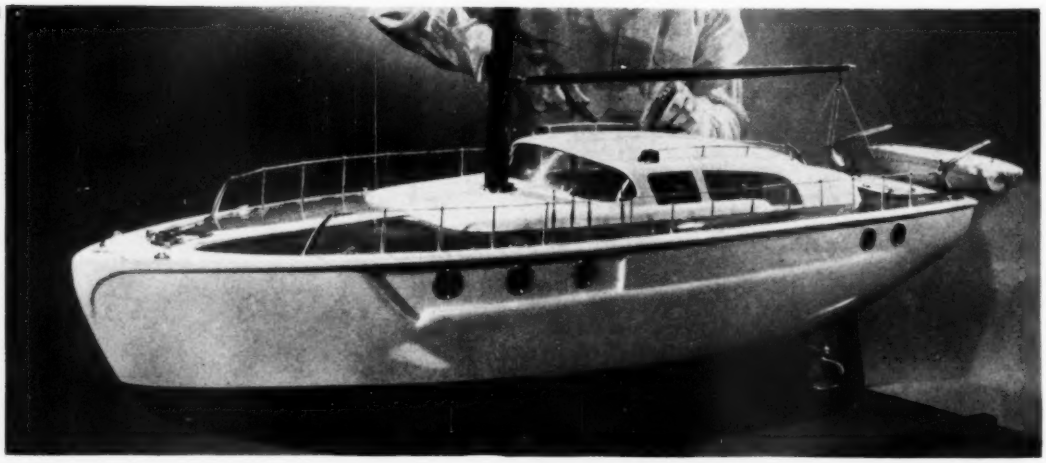

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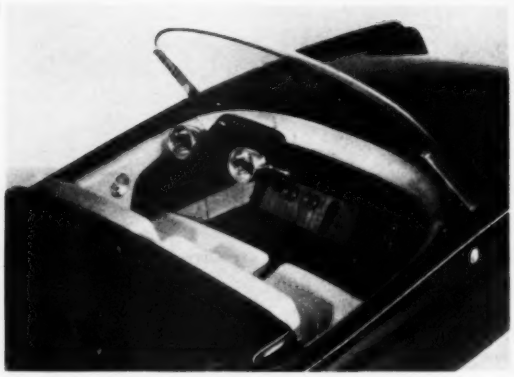

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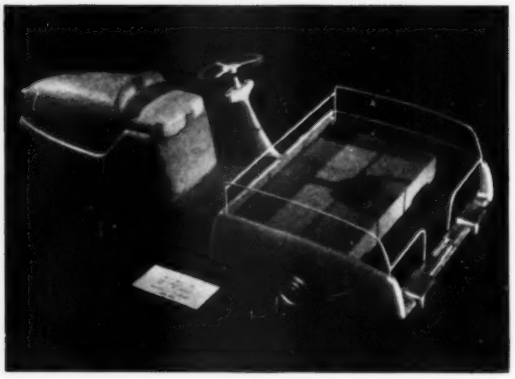

Art Center School, Los Angeles

PRINCIPAL *E. A. Adams*

With the emphasis on a professional approach students concentrate on those subjects directly related to product design – perspective, surface development, industrial drawing and colour, structure, model construction, and graphics, with a small proportion of time, about two hours each week, given to general studies. This school has been described by unkind critics as superficial academically. There is no doubt that the Art Center School produces first rate technicians – able to render, make models, and impress with their skill, though there are many people who fear that this is all that the system produces. But, Mr Adams points out that a willing and active industry awaits the young designer who is properly trained in a professional school – which Art Center is – where design ideas are drilled and disciplined.

4

4 Moulded plastics ski grips, a fourth year project. DESIGNER *James Schouckl.*

5 Lathe turned door knob, a second year machine-form study. DESIGNER *Robert Cale.*

6 Full scale model of a binocular polaroid camera – a fourth year project. As in other projects, students are supplied with a project sheet giving details of the specification, time schedule required, research needed, type of market envisaged, models and drawings needed, etc. DESIGNER *Roderick Bunyia.*

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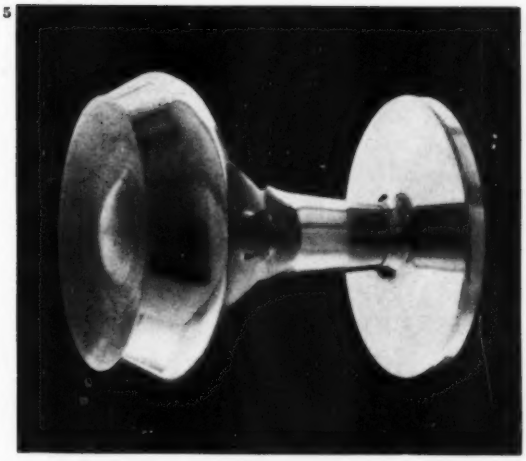

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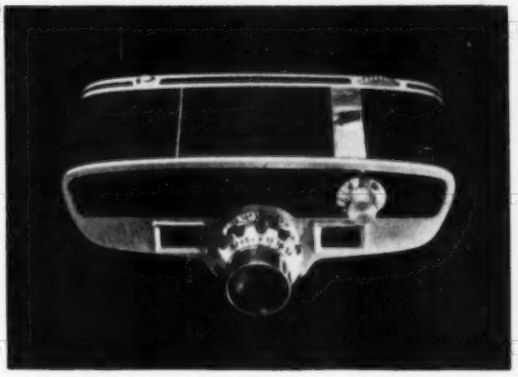

Syracuse University, Syracuse

PROFESSOR IN CHARGE *Arthur J. Pulos*

Syracuse University has one of the few American design departments with a five-year course. There is the usua foundation year – basic design, drawing and painting, figure drawing, history of art, perspective and lettering. In the following four years the student receives a broad training in the use of tools, problem solving with such materials as metal, wood, plaster, plastics, etc. A good proportion of the time is spent studying such subjects as engineering mathematics, general physics, general and experimental psychology, marketing and professional practice, with additional subjects selected from the fine arts, and with technical or socio-humanistic courses to develop a broader cultural background.

Advanced students may participate, on an apprenticeship basis, in industrial research and development projects with members of the faculty, gaining experience which constitutes a transition from school to professional work.

Industrial Design Department, Pratt Institute, Brooklyn

DIRECTOR *Robert A. Rölli*

Here manufacturers' representatives act in an advisory capacity in supervising student projects, or students engage in independent research financially assisted by various industrial organisations. It has been argued that this close collaboration with industry competes with professional designers and that students are placed under commercial influence too soon. However, Pratt maintains that this arrangement creates a mutually beneficial exchange of services which supplements the broad education of the institute. There is, as with the other institutions, a foundation year devised to develop creativity and the understanding of basic design principles with a background study of liberal arts subjects.

Intellectual breadth is sought and specialisation is discouraged. It is considered that the student quickly assimilates technical aspects and operational know how in on-the-job situations, and the study of manufacturing techniques is therefore not stressed.

7

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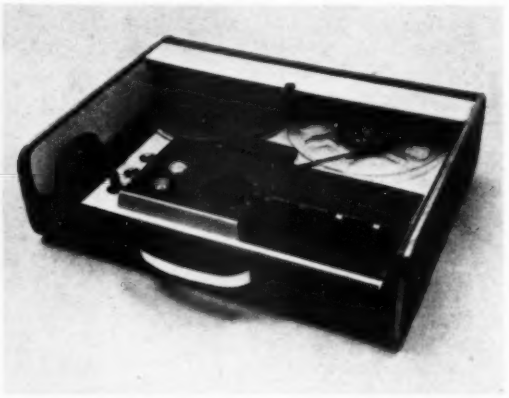

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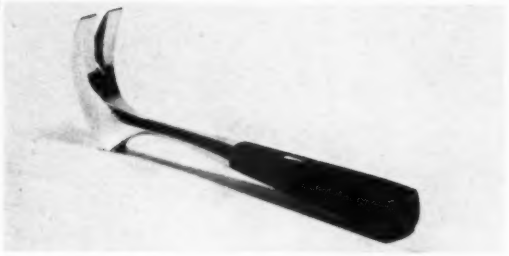

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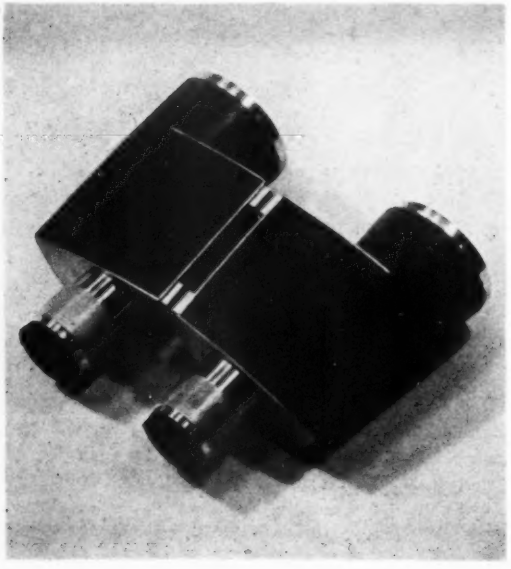


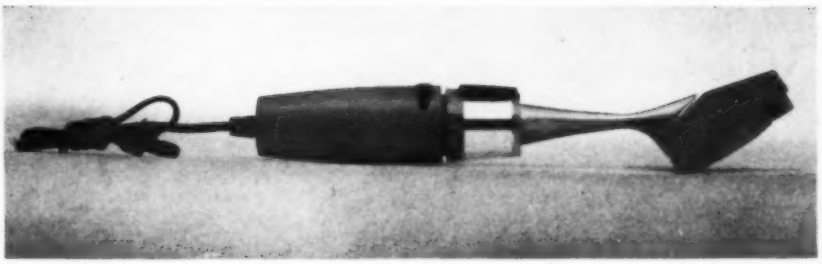
7 Portable electric typewriter with a die-cast alloy frame and housing, a fourth year project. DESIGNER *Louis Nelson*.

8 Portable tape recorder with a retractable top, a fourth year project. DESIGNER *William Koster*.

9 Hammer made of plated forged steel and wood, a third year project (in use the knuckles may not be sufficiently protected). DESIGNER *Charles Fortmuller*.

10 Binoculars, with die-cast alloy housing and plastics cloth covering, a fourth year project. DESIGNER *Leonard Levitan*.

11



11 Electric powered household window washing tool. It dispenses its own detergent and is spin rinsed to remove dirt from the cleaning element. DESIGNER *Jack Baker*.

12 Group of screwdrivers by students most of whom have degrees in other fields and have no prior design training. The problem was to achieve the close relation of the hand to a simple operation.

13 Chair made of glass fibre upholstered with foam rubber. Torsion bar springing acting on nylon rollers is employed. DESIGNER *Kenneth Fenne*.

14 Electric powered hand file using a linked belt principle. DESIGNER *Kenneth Fenne*.

continued

12

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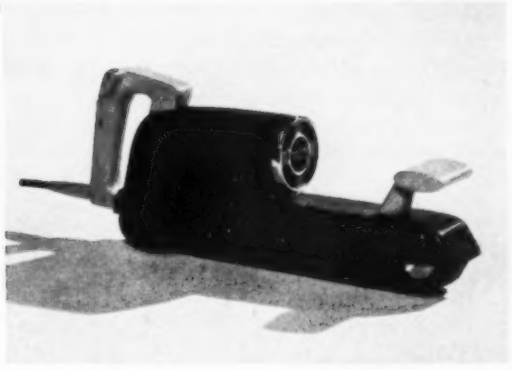

Institute of Design, Illinois Institute of Technology, Chicago

DIRECTOR *Jay Doblin*

The Institute of Design was founded in 1937 in Chicago by Laszlo Maholy-Nagy and was led by him until his death in 1946. Three years later the institute was merged with the Illinois Institute of Technology. This was significant, for it gave the Institute of Design the administrative help and the opportunity to offer accredited degrees. Jay Doblin was at one time with Raymond Loewy Associates, and, under him, the school is being developed from an essentially pure Bauhaus approach to a more contemporary concept which recognises the growth of industrial design to a mature professional status. Product design, photography, shelter design and art education are the subjects taken. It is interesting that in spite of the science degree given, half the faculty have fine art backgrounds, as it is considered essential to the development and appreciation of aesthetics. The full time members of staff spend a maximum of 18 hours a week teaching, and virtually all the academic staff, including the director, are practising designers.

In the second year, along with basic design and planning experience, which is mostly gained in the workshop, some time is devoted to elementary calculus. Physics is also studied including wave motion, sound, geometrical and physical optics and colour with emphasis on illumination, photography and other practical applications, with some time spent on elementary mechanics and properties of matter, heat and electricity. Applied mechanics and history of art are also studied in the second year. In the third and fourth years the major part of the course is devoted to product design, but it is considered essential that time is also spent in studying such subjects as music appreciation, public speaking, production methods, and principles of economics.

University of Illinois, Urbana

HEAD OF DEPARTMENT OF ART *James C. Shipley*

Specialisation in one material or in one product category is not encouraged at the University of Illinois. All design courses during the third year require the student to design a variety of products, in a variety of materials, and in the fourth year when the student is given considerable freedom in selecting his projects, he is encouraged to take at least one major furniture-furnishing project and at least one appliance project. There are no courses concerned with the development of skills in wood-working or metal-working or the operation of tools and machinery, or courses to develop skills in graphic rendering. There are only design courses in which, as needed, these skills are practised and developed.

Although the curriculum in industrial design is conceived to provide a thorough professional training with a balance of studies – art, marketing, engineering and general education – those in art and design are considered to be the core of the designer's training.

All advanced courses in industrial design are conducted on a basis which is nearly as possible like industrial design practice. Each project is taken through all those steps normally undertaken by practising designers in developing a new project. One major difference is always observed, however; a student is never asked to compromise his solution to meet the demands of a market or client. Time is so short in college that all the student's available time is directed to achieving the highest standards of which he is capable. The student, however, is made aware of the reality that in practice the designer sometimes finds himself designing for segments of the public that do not share his tastes or convictions.

16

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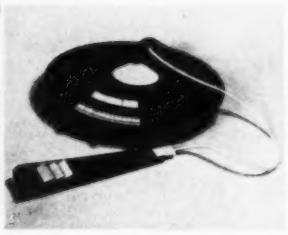

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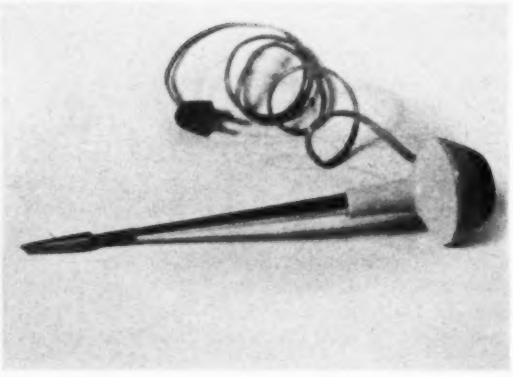
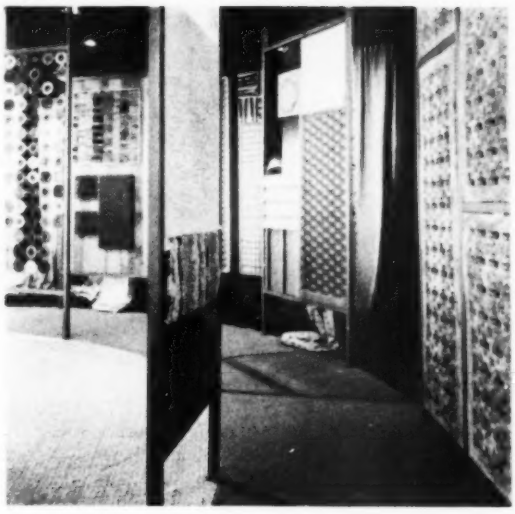


15 and **16** Two dictating machines, a final year project. Students are asked to carry out research in terms of local and national surveys and to analyse the problem in order to overcome existing deficiencies. DESIGNERS *Don Levy* (**15**) *and Howard Noel* (**16**).

17 Electric soldering iron, a study in human engineering with an emphasis on new solutions to the problems of grasp, use, maintenance, etc. DESIGNER *Lee Farrell*.



Part of the first central *Panorama* display, designed by Tom Lee, showing the decorative possibilities of various materials including plaster, stone, ceramics, plastics, glass, wood and so on. The *Panorama* displays are changed every six weeks.

USA: Centre for decorators

The formation of a Design Centre for Interiors in New York was briefly announced in DESIGN *for October* 1957 *page* 24. *The author, a partner in the British industrial design organisation, THM Partners, recently visited the centre while in America and has written this report of her impressions.*

The Design Centre for Interiors which has recently opened on Manhattan's smart east side is exactly what it says it is. Although the director, Norman Ginsberg, pays our own Design Centre in London the compliment of saying that some of his ideas were picked up from a visit here, one should not think that the New York centre is in any way an equivalent. It is in fact devoted wholly to interior design and is largely composed of manufacturers' miniature showrooms exhibiting everything from a period room to a modern office.

One of the most interesting features of the exhibition is a central area called *Panorama* – in which displays are arranged showing new trends and developments in the interior design field. The first of these shows, which are changed every six weeks, was devoted to a display of decorative materials and was designed by the centre's consultant designer Tom Lee. It is likely that the exhibitors who have taken space in the main body of the exhibition will revise their displays to integrate them with these central exhibits.

The New York Design Centre aims at serving wide interests – the general public, the decorator, the designer and the business man. Anybody can walk in and view the exhibits, all of which have been vetted by an advisory council headed by Mr Lee.

A welcome feature of the centre is its excellent information bureau. This is set in an area well away from the exhibition traffic and is staffed by specially trained personnel. Most questions on interiors can be answered straight away. Where research is required this is carried out quickly and efficiently.

In addition to the information bureau an intriguing visible filing system has been specially developed for the centre by Remington Rand. This can be operated by the visitors themselves. Cards containing information on product availability, etc, are mounted on eye level locators for easy viewing. Another new feature in this department is the Kard-Veyer, a mechanised cross-referenced index that claims to answer any conceivable question about interior design. There is also a further index specifically for the trade and closed to the general public. Accommodation facilities such as desk space, telephones and conference room are available for professional designers, builders, architects and buyers. There is, too, a specialised research service for manufacturers, industrialists and advertising agents, providing information on colour, trade and consumer polling, market analysis and product acceptance.

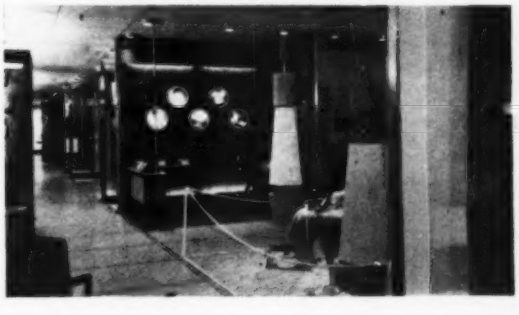
All this sounds fairly formidable but the whole area is designed functionally and with great charm. Mr Ginsberg has made a careful examination of the requirements of the American market and has beamed his service with all the objective efficiency that one expects to find in the United States. Recognition must be accorded to the uniformly high standard of execution of the displays. In this, I think, many of us in Britain could certainly take a leaf out of the American book.

Although the centre has only been open a short time it is already rating high daily attendances and seems to provide a real service both for the technician and the public. Much of its success must certainly be due to the thoughtful treatment of what might otherwise have been just another good idea.

LUCY HALFORD

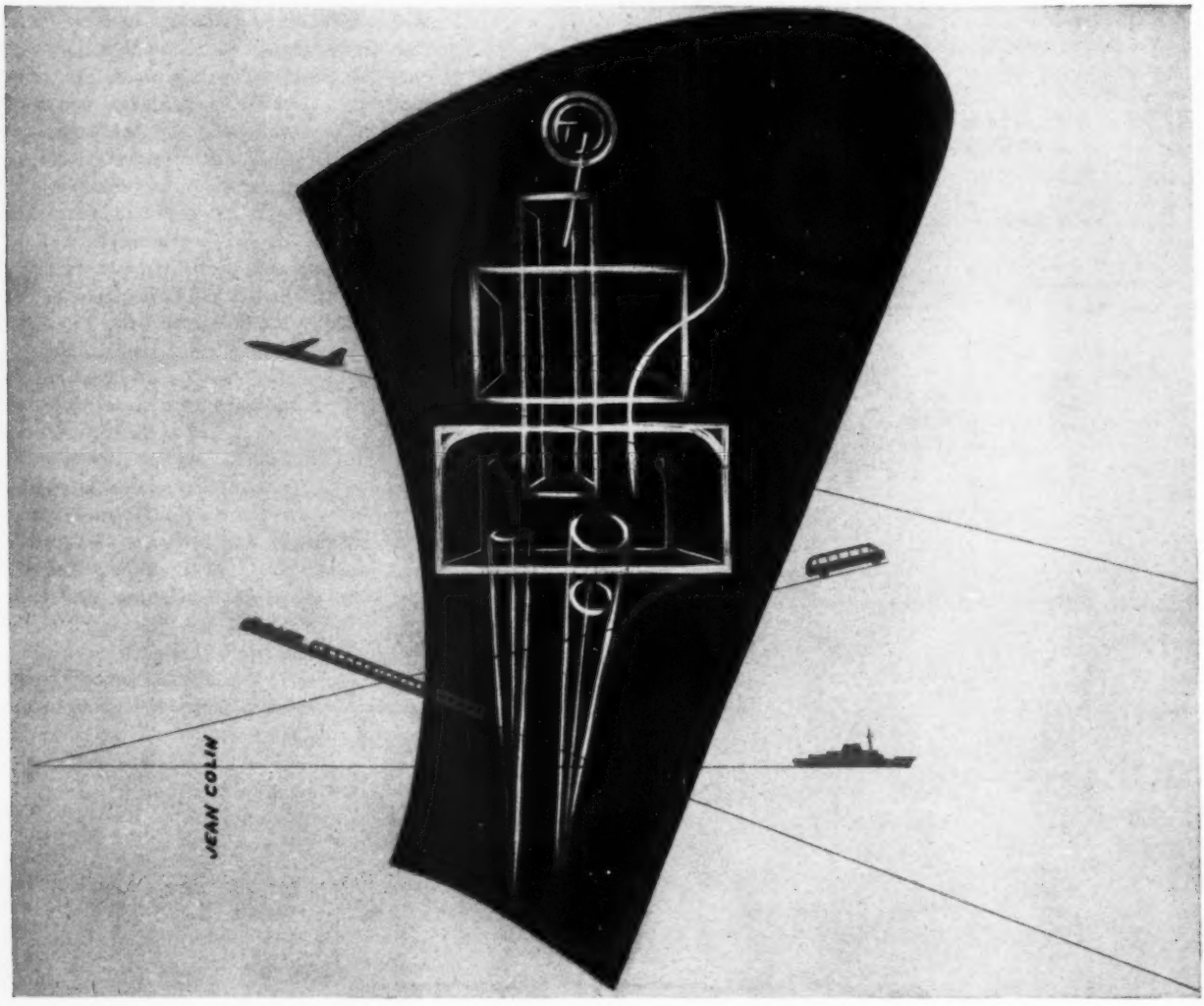
ABOVE Part of the information bureau, the comprehensiveness and efficiency of which are praised by the author.

BELOW General view of the centre showing some of the individual stands



As I see TI...

The French designer, Jean Colin—asked to give his impressions of Tube Investments Ltd.—sees TI primarily as part of the restless world of movement.



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Miscellany

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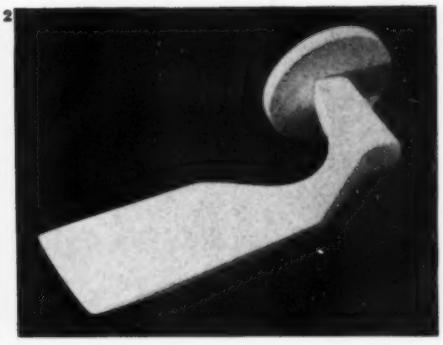
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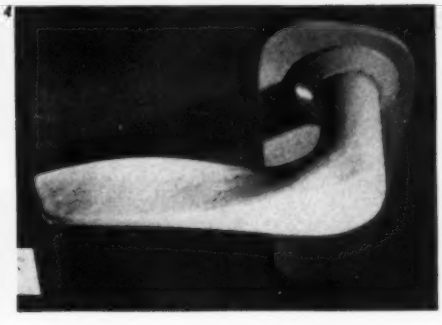
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Photographs by Sam Lambert

Off the handle

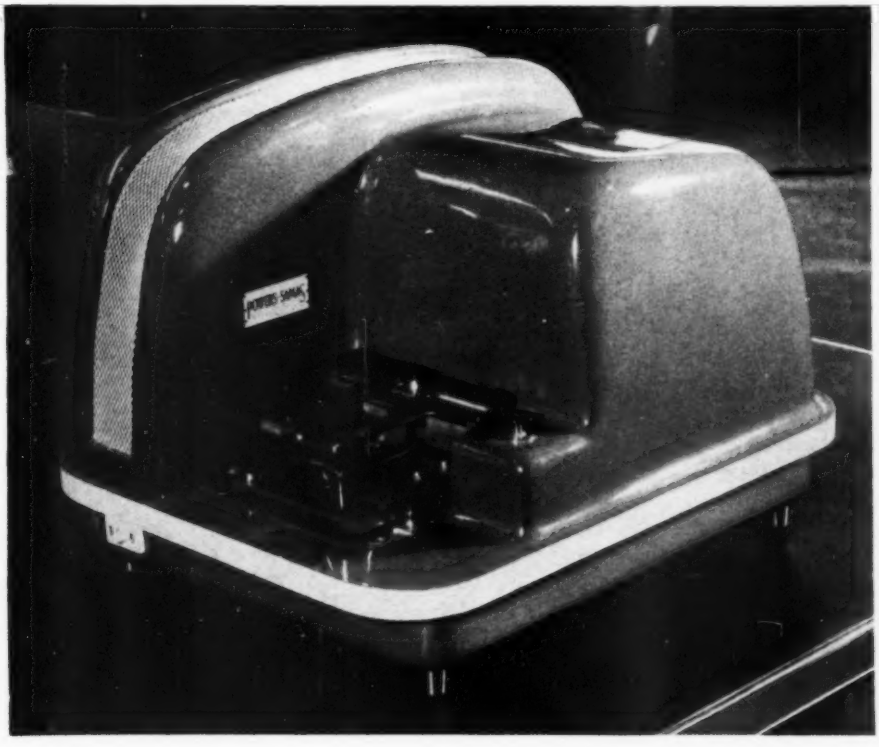
A competition for the design of a lever door handle was recently organised by A. G. Roberts (Exports) Ltd. This firm supplies door and window fittings to architects, etc, and finds that as far as door furniture is concerned, the bulk of the demand is for Swedish and German designs.

The directors hoped that the results of this competition would prove to the British manufacturer that designers were available who could produce good door furniture, and to the architect that British designers were as original and as inventive as those on the Continent.

The competition was open to architects, designers and students, and the brief was to design a lever door handle suitable for use in public buildings.

The assessors – two architects, Anthony Cox and Peter Chamberlin, and Richard Planck, a director of the firm – voiced their disappointment in the venture in a report issued when the results were announced. Of the 67 entries, only six were from architects, and the majority from architectural and industrial design students. The assessors reported that "the general standard of design was disappointingly low, a large number of entries being quite unacceptable on grounds of comfort, mechanics or appearance. A surprising number of the designs were over or undersized; the assessors take the view that the sizes of hands and doors are relatively constant, so that variations in handle size cannot be great. Except in a few cases little attention had been given to the methods of fixing, and plates and roses were often ill-considered or omitted altogether. There were a few purely 'hand form' sculptural designs, which were gross in the extreme, and quite unacceptable both for production and use".

The assessors decided that no design was good enough to merit the first prize of £100, and they divided the prize money between eight designs which they felt were worth special mention. Four of these are illustrated on this page. **1** was designed by Eric Delf of the Leeds College of Art, **2** by Peter F. Ralph, **3** by Roger S. Edmunson, and **4** by J. E. Heritage. The award winning designs were exhibited recently in the Building Centre, London.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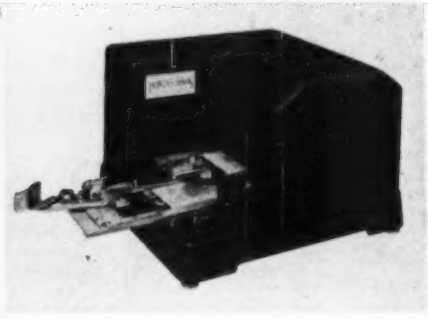
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Desk reproducer

Powers-Samas (now International Computers and Tabulators Ltd) has recently introduced a new model of its desk reproducer. The original reproducer, **6**, which was introduced in 1957, had a 17 swg steel casing. In 1958 the company asked Mark W. Schejbal, its new staff designer, to redesign the machine. The mechanism required no alteration, but Mr Schejbal's brief was to improve its appearance, lower the cost of the cover, and attempt to cut down noise. Glass fibre instead of steel is used in the new model, **5**, so that it is considerably lighter. The two halves are joined with a PVC strip, which is moulded into the top cover. Expanded aluminium gauze is used for the ventilator. The British Standard dark grey is added to the resin, giving a permanent finish.

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NEWS

PEOPLE

Pace-setting

Peter Inchbald, 40, has recently been appointed joint managing director of Walker & Hall Ltd, the Sheffield cutlers and silversmiths. When Mr Inchbald joined the firm five years ago, its outlook and production was inclined to be traditional – now, chiefly through his influence, it has one of the most forward looking design policies in the industry, and a reputation as a pace-setter in the cutlery trade.

Mr Inchbald left the Army in 1946, and spent five years at the Royal Academy Schools, and two years painting in London. In 1954 however, he decided to give up painting as a career, and joined the family firm of Walker & Hall as a trainee director. He spent two

Peter Inchbald

further years in London, and went to the silversmithing department at the Royal College of Art for one day a week. He finally moved to Sheffield, as director in charge of design, in 1956. (The move to Sheffield coincided with his submitting the prize winning entry [DESIGN March 1957 pages 38–9] for a mace for Hull University.)

Mr Inchbald began to influence the firm's design policy as soon as he joined it. David Mellor was appointed consultant designer, and in 1956 *Pride*, a best selling cutlery range, and a CoID *Design of the Year* for 1957, was introduced. The *Spring* range in stainless steel flatware was produced in 1957 (DESIGN June 1958 pages 42–3) in conjunction with J. & J. Wiggin Ltd, and several new designs by Mr Mellor are just coming off the production line, including a new tea set, and the beginnings of a new range of hotel hollow-ware.

Mr Inchbald believes that during the next few years more and more firms in the cutlery industry will want to employ consultant designers, but that they may be frustrated unless our art schools change their policy. He feels that most silversmithing departments are out of touch with the industry – they may turn out excellent artist-craftsmen – but until students are trained to design for quantity production with present-day machine processes, little progress will be made.

Advisers on art education

The National Advisory Council on Art Education, which was referred to on page 65 of DESIGN for November 1958, is to advise the Minister of Education on all aspects of art education in further education establishments. The membership of the committee was recently announced; it comprises the following: chairman, Sir William Coldstream; Minister's nominees: J. L. Beddington; Nikolaus Pevsner; Elizabeth Wray; Oliver Lebus; I. F. Brash; Whitney Straight; other nominations: S. C. Mason, nominated by the County Councils' Association; M. J. Keeble, the Association of Municipal Corporations; W. G. Stone,

Keystone Press

Sir William Coldstream, Chairman

Nikolaus Pevsner

J. L. Beddington

Sir Hugh Chance

E. E. Pullée

Association of Education Committees; F. L. Freeman and E. E. Pullée, Association of Art Institutions; W. F. Houghton, LCC; L. J. Drew, Welsh Joint Education Committee; S. I. Hemming and J. C. Tarr, National Society for Art Education; F. Briers, Association of Principals in Technical Institutions and Association of Teachers in Technical Institutions; Gabriel White, Arts Council; Misha Black, CoID; Sir Ernest Goodale, Federation of British Industries; Victor Pasmore, Institute of Contemporary Arts; James Fitton, Royal Academy of Arts; Robin Darwin, Council of the Royal College of Art; A. Neville Ward, RIBA; A. B. Read, Royal Society of Arts; Milner Gray, SIA; Sir W. Hugh S. Chance and E. R. L. Lewis, National Advisory Council for Education in Industry and Commerce; J. W. Tibble, National Advisory Council on the Training and Supply of Teachers; F. E. Courtney, Principals of Art Teacher's Diploma Centres; from the Ministry of Education: A. A. Part, S. M. E. Goodfellow, C. R. English, F. H. Rowden; secretary: Wilma Harte; assistant secretary: D. W. Constable.

OBITUARY

Kay Bojesen

Kay Bojesen has died, aged 72. Since the 'twenties he was among the leaders of Danish industrial design. His method of working and appreciation of materials were those of a craftsman; his aim was to design in terms of

the machine for quantity production. Many examples of his work in cutlery and flatware show how successfully he achieved his aim. Kay Bojesen was known internationally for his toys and chiefly for his monkey, an enlarged version of which is shown above with its creator.

CoID

The Design Centre in Wales

This month *The Design Centre goes to Wales*, in fact to the store of David Morgan Ltd in Cardiff, where an exhibition on similar lines to the one recently staged at Bainbridges, Newcastle, is being held. As in the Bainbridge exhibition, a small-scale version of the Centre has seen set up in the store and the goods on show, over 400 of them, have all been taken into stock and are on sale to the public. It has been designed by Robert Nicholson to fill an area of about 4,000 square ft

continued on page 65

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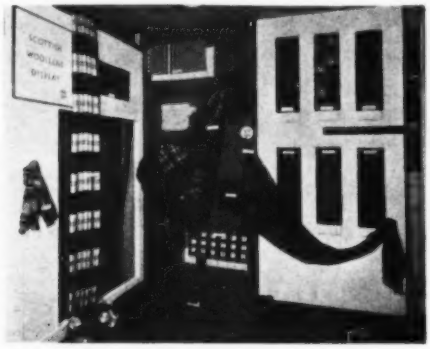
NEWS

located on two floors, and will include two room-settings – a dining room and bedroom – and two dining groups.

David Morgan Ltd, one of the largest family stores in Wales, with 75 retail departments, employing about 850 people, was founded 79 years ago by David Morgan, a draper from one of the valleys and grandfather of the present managing director, Trevil Morgan. It was Mr Morgan who approached the CoID with the idea of repeating the Newcastle project in Cardiff. In the past Morgan's has arranged exhibitions, sometimes in co-operation with the CoID, showing well designed goods, particularly furnishings, and has organised lectures on various aspects of design in the home.

Mr Morgan, judging on the success of these previous ventures, believes that there is a growing local interest in well designed goods and that The Design Centre exhibition will prove helpful to customers and beneficial to trade.



Scottish fair

ABOVE *Part of the Scottish Woollen Publicity Council's display in the recent* Cloth Fair *exhibition at the Scottish Design Centre, Glasgow.* BELOW, *left to right, Hugh Cowan Douglas, chairman of Glenfield & Kennedy Ltd, Lord Polwarth, chairman of the Scottish Council (Development & Industry) and Lord Bilsland, former chairman of the CoID Scottish Committee, discussing the exhibition at the opening.*

Scottish Design Centre

Design '59 is the title of the next exhibition at the Scottish Design Centre in Glasgow. It will be of a general nature, but the emphasis will be on the kitchen, with supporting displays of other household equipment and fittings.

There are to be two special features – a one-room living unit similar to the London Design Centre display (but adapted particularly for Scottish conditions), and the *Designs of the Year* 1959 from The Design Centre in London. There will also be two other room settings – a kitchen and laundry, and a home workshop.

Exhibits include electrical and gas equipment, furniture for kitchens and bathrooms, some wallpapers and textiles, floor coverings of various kinds, kitchen utensils, gardening tools, power and hand tools for use in the home workshop, etc.

Design '59 opens in mid-May and will remain open from 10 am to 5 pm daily, except Sundays and public holidays, until July 17.

Editorial departure

Roger Coleman, who has been an editorial assistant on DESIGN for the past two years, has left to concentrate on free-lance work.

REPORTS & CONFERENCES

Safety at last?

The British Safety Council has recently published a report to its members by James Tye, an administrative director of the council, on *Seat belts and harnesses for private and commercial vehicles.* The report mentions how little research has been made in the United Kingdom on this subject, and that it had been necessary to study the results of findings from seven foreign countries, particularly America. The report believes (basing its estimate on figures put forward at the hearings of the United States Committee on Traffic Safety), that the universal adoption of seat belts could reduce fatalities by 52 per cent. In terms of Great Britain this would mean a saving of 700 lives per year. A recommendation of the report is that a committee be set up with representatives from safety organisations, motor manufacturers, the RAC, the AA, and the Road Research Laboratory to advise the Government on the pressing need for the adoption of seat belts in this country.

Standardisation in the motor industry

E. Woodbridge, standards and technical manager at the Society of Motor Manufacturers and Traders, recently read a paper on *Standards and standardisation in the motor industry* to the automobile division of the Institution of Mechanical Engineers.

No engineering or product designer today can afford to ignore the importance of standardisation. As a means of justifying tool costs, reducing production and material costs, and simplifying maintenance, its value is obvious.

The field covered by standards includes material specifications, material forms (bars, channels, angles, moulding sections, etc), dimensions, standardised parts such as screws and nuts, and, within a firm or an industry, the standardisation of components and products. Examples quoted in the paper of the latter were the reduction – by agreement within the industry – of the number of different types of telescopic damper from 222 to 56, and the use, within a single firm or group, of a standard basic engine for a wide range of car types and models.

Such standards are never enforced and are essentially recommendations, but closely allied to standardisation are the restrictions enforced by law – usually for reasons of safety. Thus car lamps and number plates and the seating in public service vehicles are very closely controlled dimensionally.

His and hers

'The Bed' designed by Robert Heritage and made by Slumberland Ltd, was shown recently at the furniture exhibition. It is in English ash with side fitments in Rio rosewood. The side fitments are for him *and* her *and contain built-in radios, bookshelves and dropdown fronts that lock into bedside tables. From a control console drawer in the fitments the curtains can be opened and closed, the lights controlled, the television switched on and off, and the mattress heating units controlled. In addition on* his *side there is a tape recorder and on* hers, *an automatic tea-maker.*

While it is comparatively easy to become familiar with the standards affecting a single industry, it is almost impossible to know all about the standards of a wide range of engineering and product design. This in itself can be quite a problem to an industrial designer. Added to which, international standards exist as well as standards peculiar to a country or an industry.

Finally there is the big criticism that standardisation puts a brake on progress. If badly handled this could indeed be so, but generally speaking there are too many people conscious of the danger to allow it to happen on a big scale. A standard should only be attained as the result of clear thinking and selection and this in itself ensures that it has a reasonable length of life. The purpose of standards is to avoid waste, not to halt progress. As soon as there is any evidence of the latter the standard should be, and usually is, dropped or revised. E. G. M. WILKES

EXHIBITIONS

American design

The recently opened gallery of the United States Information Services, 41 Grosvenor Square, W1, is holding an exhibition of American typographical design which closes on April 30. It will include the work of leading designers such as Paul Rand, Saul Bass, and Bob Gill. Following this in May will be an exhibition showing the work of students in the leading industrial design schools in the United States.

Selected plastics

This year, as in 1955 and 1957, the *British Plastics Exhibition* organised by *British Plastics* will include a special display of well designed plastics products. The display will be selected from the CoID's 'Design Index' by a committee representing the organisers, the CoID and The Plastics Institute. Any manufacturer of "well designed plastics products for use in the home"

continued on page 67

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TC13 ARMCHAIR

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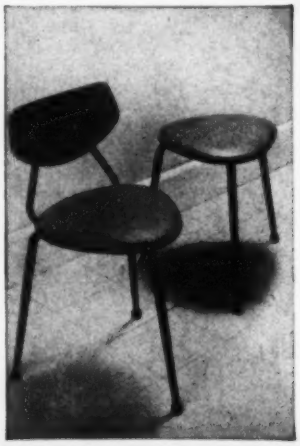

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who wishes to be considered for the display, but whose products are not in 'Design Index', should send designs to The Design Centre not later than May 1.

COMPETITIONS

Top tablecloth

Courtaulds Ltd is organising a competition for the design of a tablecloth. The competition, which is open to students of art schools and technical colleges in England and Wales, will be judged by a panel of assessors, under the chairmanship of Sir Gordon Russell, director, CoID. Competitors will be supplied with shade cards of Courtaulds' *Viscose/Duracol* and *Fibro/Duracol*; they will then be asked to order the yarns they require and make up their own samples. Full details and entry forms are available from the Promotion Department, Courtaulds Ltd, 22 Hanover Square, London W1.

MISCELLANEOUS

Ergonomics for atomics

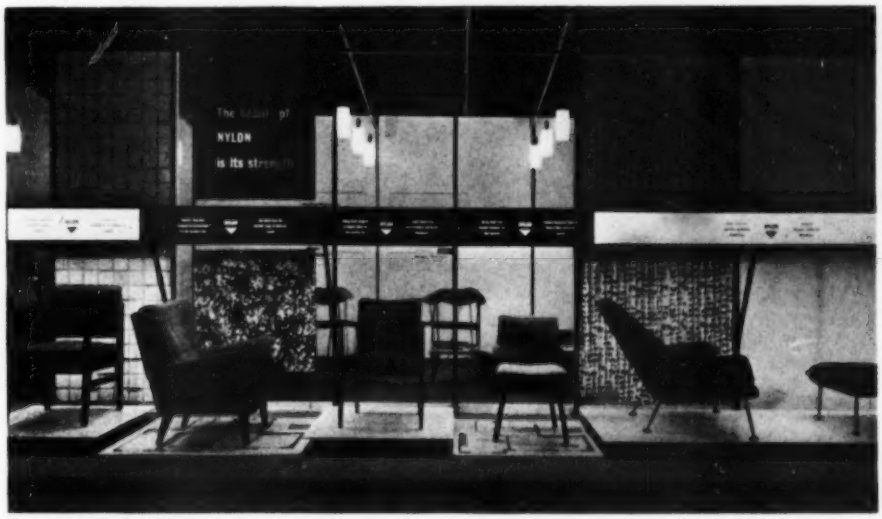
The Atomic Energy Division of GEC, at Erith, Kent, has appointed H. D. Howse to form a human applications section to advise on the ergonomic aspects of the design of nuclear power plant.

In nuclear power, perhaps more than any other field, factors of safety and reliability necessitate the use of highly elaborate systems of control. This in turn implies a complex man/machine relationship, and it is therefore essential that human capabilities and limitations should be fully considered at all stages of design, whether in the formulation of an overall control philosophy, or in the detailed specification of individual pieces of equipment.

While most of the section's work will be concerned with fitting the machine to the man, the mental and physical demands of the various duties will also be studied with a view to making recommendations on the selection and training of suitable operators.

Reconstruction

Some time ago the reconstructed Morley College in Lambeth was opened by HM Queen Elizabeth the Queen Mother. The original building was destroyed by bombing in 1940. Morley, a basically non-vocational college, was founded for "the advanced study of subjects not connected with or applied to any trade, handicraft, or business", and according to the principal, Denis Richards, two directions can be marked out for the future; one, towards breaking down the barriers between scientists and non-scientists and the other, a greater cultivation of the arts. The new building has increased accommodation for these pursuits; for instance a laboratory, art and craft rooms, and the Emma Cons concert hall. An interesting feature of the college building is the group of four murals; one in the refectory by Edward Bawden; one in the common room by John Piper, and two in the Emma Cons hall by Martin Froy, which in effect replace the former ones by Bawden and Ravilious which were destroyed with the original building. The new buildings were designed by Charles Cowles-Voysey, before he retired in 1954, but were modified before construction began.



Nylon for furniture

The British Nylon Spinners' stand at the Furniture Exhibition *this year featured the use of nylon as an upholstery fabric. The stand was designed by George Collett Associates, the contractor was The City Display Organisation.*

Light years

This year The Illuminating Engineering Society is celebrating its fiftieth birthday. The aims of the society, in the words of its constitution, are "to promote the art, science and technology of lighting in all or any of their branches". It has now 2,500 members (although including a hard core of lighting engineers, etc, membership is not limited to those professionally connected with lighting) with 13 provincial centres including one in South Africa.

One of the most notable achievements of The Illuminating Engineering Society is its *Code for lighting in buildings*, which has the endorsement of the factory lighting committee of the Home Office and the lighting of buildings committee of the Department of Scientific and Industrial Research.

The CoID is collaborating with the society in the arrangement of an exhibition of lighting fittings, most of which were designed by IES members, to be held in The Design Centre from September 14 – November 7.

Disc symbol

A new record company, called Rank Records Ltd, was recently formed by the Rank Organisation. The trade mark for the new company has been designed by R. H. Leon-Gibbons, who was until recently a member of the design staff of the Rank Organisation central advertising department. The trade mark symbolises a spinning record on a turntable and a pick-up head incorporated with the Rank 'man with the gong' and two 'R's of Rank Records.

Glass fibre curtainings

Vetrona Fabrics Ltd, a Tootal subsidiary, announces a new glass fibre curtaining fabric. *Vetrona* is available at prices ranging from £1 to £1 9s a yard (width 46 inches). A notable achievement is that the fabric can be printed. It is also available in a range of plain dyes and in some very interesting openwork bouclé weaves which seem for the present to be the most successful application of the material.

By its nature, glass fibre cannot burn. In addition, it does not absorb dirt and is very easily washed. It dries quickly, needs no ironing and is dimensionally stable – it will not shrink or stretch. The manufacturer does not recommend *Vetrona* for upholstery, but these important advantages should ensure much interest for contract furnishing and, to a lesser extent, for domestic use.

DAN JOHNSTON

Two lectures

Milner Gray will give a lecture on packaging at the Royal Society of Arts, 6 John Adam Street, on April 22 at 2.30 pm.

On May 6 at 2.30 pm Walter Dorwin Teague, the American designer, will talk on *The growth and scope of industrial design in the United States.*

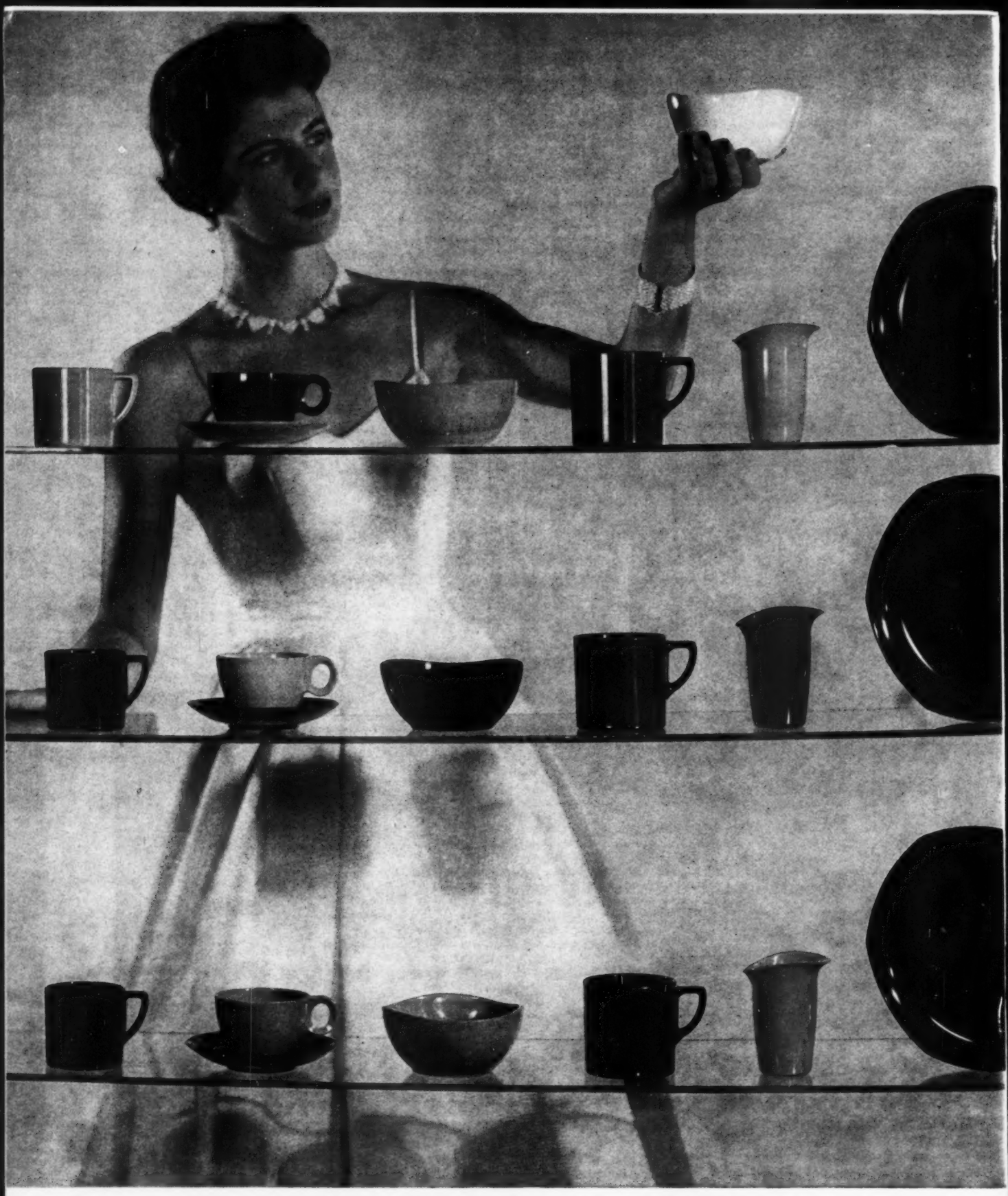
LETTERS *to the Editor*

Advertising Britain in South Africa

SIR: Even in countries like South Africa where exhibitions have not reached the same high standard as in Britain, it is realised that one can produce a national pavilion and epitomise the efforts of a country. Yet M. L. G. Balfour of the Export Publicity & Fairs Office, Board of Trade, puts forward a rather old-fashioned view that an industrial exhibition is difficult to mount because it implies competition between one product and another (DESIGN November 1958 page 71).

I suggest that this viewpoint is out-dated and that Mr Balfour's letter implies a dragging of Britain's industrial feet. In his letter he says that "In view, however, of the action of other countries in setting up their own national pavilions at the *Rand Show*, it has

continued on page 69



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been decided, with reluctance, that we have no alternative but to follow suit . . .'

Mr Balfour's comment suffers by contrast with the recent statement made by the West German Government, which says that owing to the success of its pavilion at the *Rand Easter Show*, it is going to make the display even more comprehensive.

As one who has seen the enterprise shown in this pavilion over the past few years, I can assure Mr Balfour that the British Board of Trade should endeavour to mount a first rate exhibition and recognise that we live in a competitive world.

I also disagree with his statement that a large part of the *Rand Show* consists of goods produced directly or indirectly by Great Britain. This should be qualified to read that although a number of products bear British names, most of them – and when I say most of them I mean most – are manufactured in South Africa. What I have in mind is more in the nature of a pavilion that advertises Britain and her achievements to date, rather than the indirect connection of British names with South African-made goods.

CHARLES WINCKLEY
Industrial Architecture
55 Hout Street
Cape Town
S. Africa

Money well spent?

SIR: It was depressing to walk around the last *Motor Show* and see so many firms claiming that their styling comes from Italy. Does the motor industry realise the predicament it is putting itself in by paying so much for these designs? We feel it means that as the design teams abroad gather experience, the young designer in Britain has less chance to develop his talents and gain confidence. Why does not the motor industry put by some of the vast sums of money spent overseas on design for the training of young designers in this country? Perhaps the SIA and Motor Industry Research Association could co-operate in solving this problem.

J. K. WHITE
MARTYN ROWLANDS
7 Woburn Square, WC1

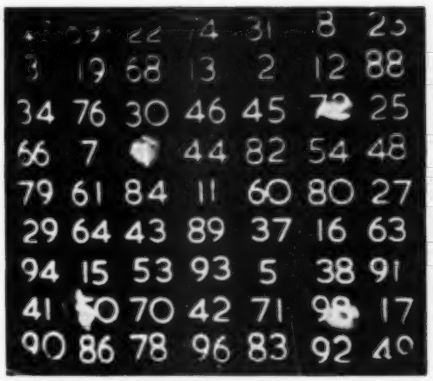
BOOKS

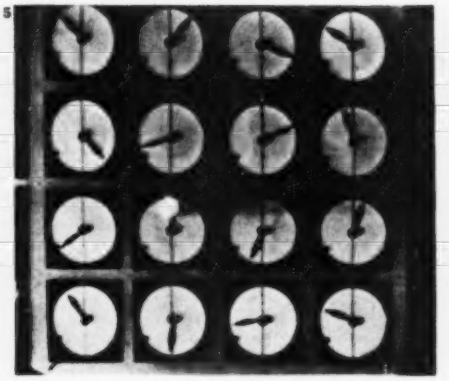
Report on EPA Project 335 – *Fitting the job to the worker OEEC, HMSO* 14s

The European Productivity Agency is the branch of the Organisation for European Economic Co-operation charged with the task of "stimulating productivity and thereby raising European standards of living". Much of the work of this agency is based on the principle of exchanging information on production standards and technological developments between European countries and importing such information from America. This is done by collecting specialists either for a conference in Europe or as a mission to visit America. (The "*ad hoc* group of experts" is a standard EPA phrase.)

Both these techniques were used in project 335. The first phase of the project was a tour of America from September to November 1956, and the second phase was a seminar in Leyden in March 1957. The first involved a total of nine specialists from seven European countries and the second about 60 from 11 countries. The purpose was to survey American and European research into working conditions in industry. This study can be separated into two parts, one concerned with the climatic environment which is the province of industrial hygienists and physiologists, and the other with "fitting the machine to the man" in which physiologists, psychologists, anatomists and physical anthropologists can be involved. The comments here are restricted to this latter field which is, of course, not confined to industrial workers; the same knowledge and techniques used to study the fitting of a production machine to an operative apply in problems of fitting

continued on page 71





ON THE LINE OF SIGHT

continued from page 31

illustration the display gives numerical information such as exchange prices or the production state of a factory, **14**. The subject is searching for particular numbers and the figures on which the eye rests are marked by the tell-tale patch of light.

A similar problem is the study of the search patterns adopted by skilled inspectors in industry. If we knew the answer to this problem we might be a long way ahead on the question of training inspectors. In the same way the shopkeeper would surely benefit by knowing what takes the eye in a window display or in a display of goods in a self service store. These are examples of practical problems of great importance to industry and commerce. The answers would represent the saving of both time and money.

More complex situations arise when the display (ie the scene before the subject) is constantly changing as in driving a motor car, observing a radar display or piloting an aircraft – the Mackworths' portable equipment has already been used by a pilot during a 40-minute flight. An advantage of the eye-marker methods here is that they reveal the order in which the subject scans the different parts of the display and the time relationships of the shifting of the gaze. This is illustrated, **15**, in an experiment with many dials, the pointers of which rotate continuously at different speeds. The subject has to press the correct switch as certain pointers cross the vertical line. These tasks involve decision-taking based on visual cues. It is important to know in what ways successful and unsuccessful subjects differ in the use of their eyes in these visual tasks.

In all visual tasks fatigue ultimately sets in. The eye-marker techniques will enable us to make more detailed studies of the failure of vision in fatigue and to analyse the consequent breakdown of performance into its component parts.

We have the methods, we have the knowledge of how to use them, we have the problems to solve. The industries which make aircraft, cars, radar equipment and automatic factory control and display gear cannot afford not to know the answers to the questions at the head of this article. They surely are the industries which should be conducting this research. W. F. FLOYD

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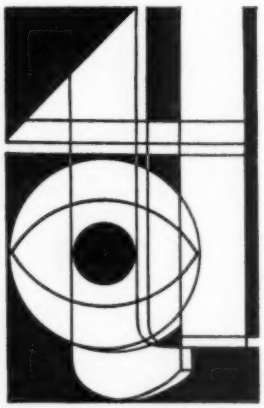

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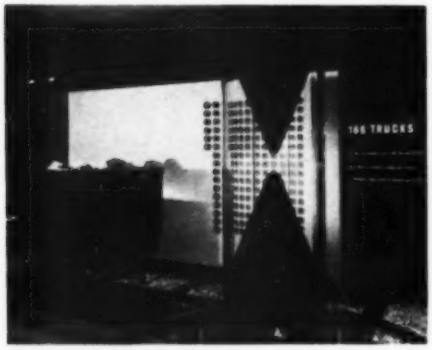
BOOKS

domestic equipment to housewives, office equipment to business men and weapons to fighting men. In fact, one of the conclusions from the American tour was that applied scientists in these fields are employed on the design of products such as telephones, cars and aeroplanes, but not at all on the design of production machinery.

The American specialists in this field (human engineering in America and ergonomics in Britain) have found an occupation in industry as advisers on the design of experiments involving people. The objective of these experiments is to find out what people want or need in the characteristics of their consumer goods. It is not much use simply asking their opinion since most people state preferences for the characteristics to which they are accustomed. Preferences on the kind of car springing, the weight of a telephone and the position of tractor steering wheels all reveal trends which indicate not what is best in any sense, but just what has previously been used. Thus a great deal of ingenuity and statistical control has to go into these experiments which are to indicate either a design which a consumer will like once he gets used to it or one which enables him to operate with fewest mistakes. The only specialists who are professionally trained to carry out such studies are research workers in experimental psychology. Their employment is based on the recognition of the principle that people's immediate opinions of what they want are almost as useless as designers' opinions of what they need.

In Europe professional ergonomists are more equally divided between the study of the needs of the consumer and the needs of the worker. To give a few examples, useful work has been done in Sweden on chair design, in Denmark on typewriter design (for ease of operation rather than pleasant appearance), in Germany on tractor design, in France on spinning machinery and in England on design of such diverse equipment as post-office switchboards, crane cabs and the controls of sewing machines.

The total effort in terms of number of people employed for these purposes throughout the world is very small – not more than a few hundred – and it is not likely to increase rapidly. Not enough is known in the human biological sciences and there are very few people trained to extend the boundaries of knowledge or to apply this knowledge. Nevertheless, the principle that a designer should consider the man/machine system and not just the machine is bound to become more widely accepted as the human engineers or ergonomists begin to make the same impact in the industrial world which they made in the services during and after the last war. W. T. SINGLETON



Diamonds displayed

This display was part of an exhibition at Christie's called the Ageless Diamond. The treatment, by Ronald Sandiford, was dramatic and effective, the lofty ornate grandeur of Christie's being transformed into modern exhibition setting with careful lighting designed to bring out the quality of the gems. The contractor was Beck & Pollitzer Contracts Ltd.

Motif No 1

Editor Ruari McLean, Shenval Press, £1 (three issues; no 2 published February, no 3 to be published June 1959).
"Oh! A new fashion magazine! May I look?" exclaimed a woman visitor, seeing *Motif* lying on my desk Its pale and precious cover certainly belies its role.

But in these days of dearth in the field of graphic arts magazines, any newcomer is very welcome. Coming from the same stable as those brilliant 'sprinters' *Typography, Alphabet & Image* and *Image*, let us hope that *Motif*, in spite of its heavier weight (£1) proves a better stayer. (Incidentally, I noticed that the editor, Ruari McLean, was a contributor to the first issue of *Alphabet & Image*.) The first *Motif* comes off badly in comparison with its predecessors, but it contains some very good things. Edward Ardizzone's contribution (what a nice, lucid style) is worth the money itself, especially to any student of illustration. Among the lesser pieces I particularly liked the diary notes of John Dreyfus. Lynton Lamb has produced a series of specially drawn Brighton scenes in his poetic style with his own comments in equally poetic imagery. I thought the sketch of the sea at night quite masterly. May one hope that *Motif* will extend this interest in illustration by also showing us the work of some of the brilliant young illustrators both here and abroad who deserve to be better known?

A typographic style now contemporary, now Victorian, tends to aid the impression of 'preciousness' mentioned. This will need careful watching. My own feeling is that *Motif's* book binding is out of place – too pretentious in a magazine - and I doubt whether it is desirable to use seven different kinds of paper. Less lavish, less expensive, bigger sales? DAVID CAPLAN

27 Chicago Designers, *Volume* 19, 1958, *Chicago Association of Commerce and Industry, 646 North Michigan Avenue, Chicago.*
Twenty-seven Chicago graphic designers associated themselves in the mid-thirties to publish an annual album publicising their work and the services they offered. As one might expect from Chicago, the present volume is a glossy efficient affair, very substantially posh, and the work is on the whole good. Some of it is reprinted work and some a straightforward personal advertisement. Each designer supplies his own four pages ready for binding, giving credits for printing, typography and photographs, and also pays a publication fee of $27 to cover binding, distribution and administration. Nearly 2,000 are sent to art buyers across the US. Though obviously an expensive enterprise it presumably pays in commissions and prestige. It is the sort of attack on the big chequebooks that, even if produced more modestly, designers here should be plotting. *Modern Publicity* and *Designers in Britain* serve neither the designer nor, I suspect, the client half as well. PETER KNEEBONE

Familar faces

Main exhibitors in the D I A exhibition, *The face of the firm* (see pages 32–7), include many firms whose house styles have been described or illustrated in DESIGN. In the following list, dates of the relevant issues of DESIGN are given for ease of reference: Austin Reed Ltd; Bentalls Ltd (November 1956 pages 39–40); Bowater Paper Corporation Ltd (November 1956 page 16); British European Airways (this issue pages 36–7); John & Edward Bumpus Ltd; Carter, Stabler & Adams Ltd; Clayton Bros Ltd; Conran & Co Ltd; Dunn's of Bromley; Ferodo Ltd; Finmar Ltd (August 1954 pages 11–14); E. Fogarty & Co Ltd (November 1956 pages 32–3); W. & A. Gilbey Ltd (November 1956 page 28, January 1959 pages 48–9); Granada Television Network (January 1959 page 48); Heal & Son Ltd; Ilford Ltd (November 1956 pages 43–4); IBM United Kingdom Ltd (this issue page 35); Kosset Carpets Ltd; Lantor; Liberty & Co Ltd (September 1949 pages 4–6); London Transport (July 1951 pages 2–3); J. Lyons & Co Ltd; Mac Fisheries Ltd (November 1956 pages 34–5); John Millar & Sons Ltd; Horatio Myer & Co Ltd; British Olivetti Ltd (February 1950 pages 8–11, February 1959 page 32); Paul & Marjorie Abbatt; Penguin Books Ltd (March 1952 pages 14–20); Reeves & Sons Ltd (August 1957 pages 38–9); Rentokil Ltd; J. Sainsbury (November 1956 page 25); Scotch Wool and Hosiery Stores (this issue, page 37); Simpson (Piccadilly) Ltd; Spear & Jackson Ltd; Spicers Ltd (November 1956, page 51); Wates Ltd; Watney Combe Reid & Co (this issue page 34); Robert Watson & Co (Constructional Engineers) Ltd (this issue page 33); Josiah Wedgwood & Sons; Woolland Bros Ltd (July 1958 page 71).

Corrections

DESIGN January page 40: the retail price of the *Hoovermatic* by Hoover Ltd is £87 16s 5d.
DESIGN March page 65: the head office of Formica Ltd is 84 Regent St, W1.

MANUFACTURERS *in this issue*

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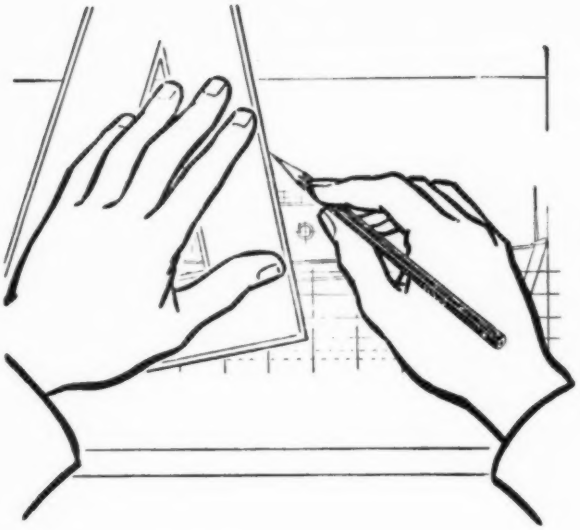

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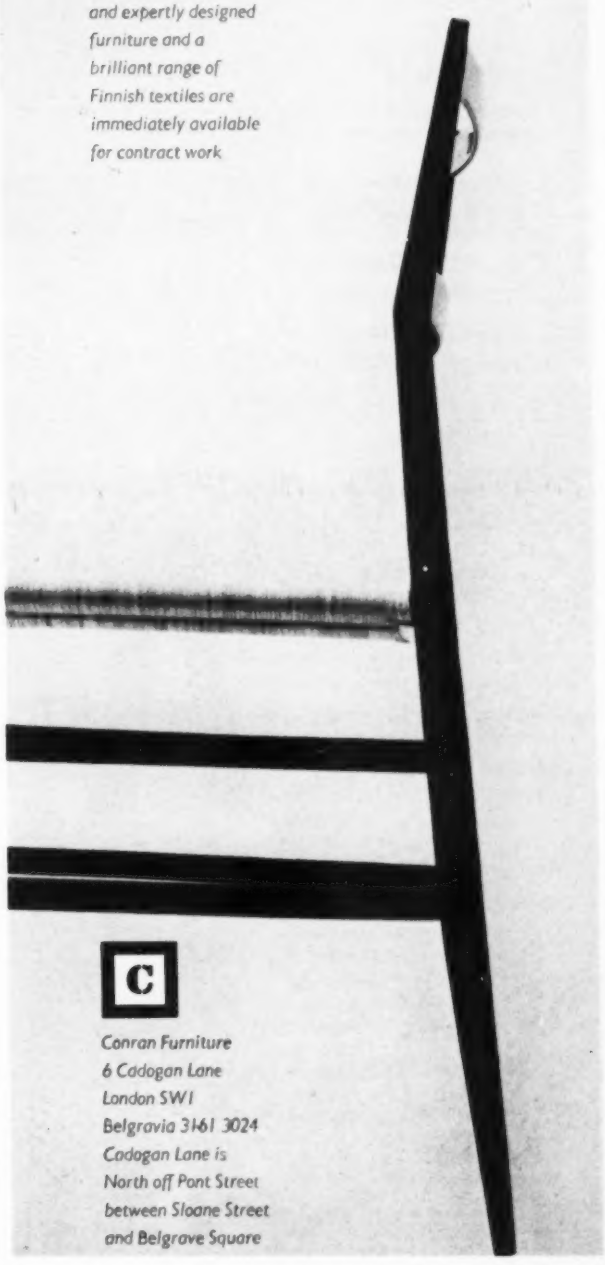

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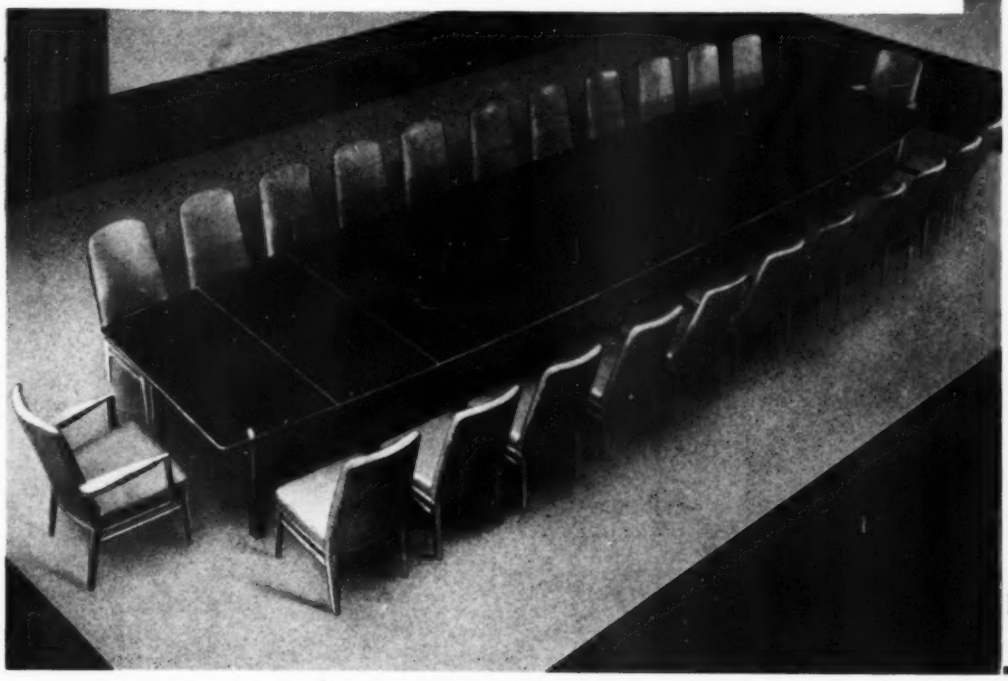

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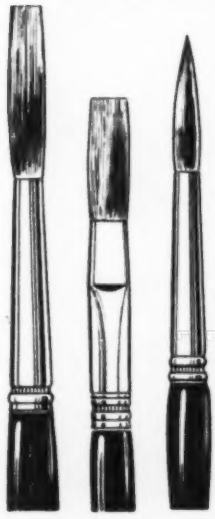

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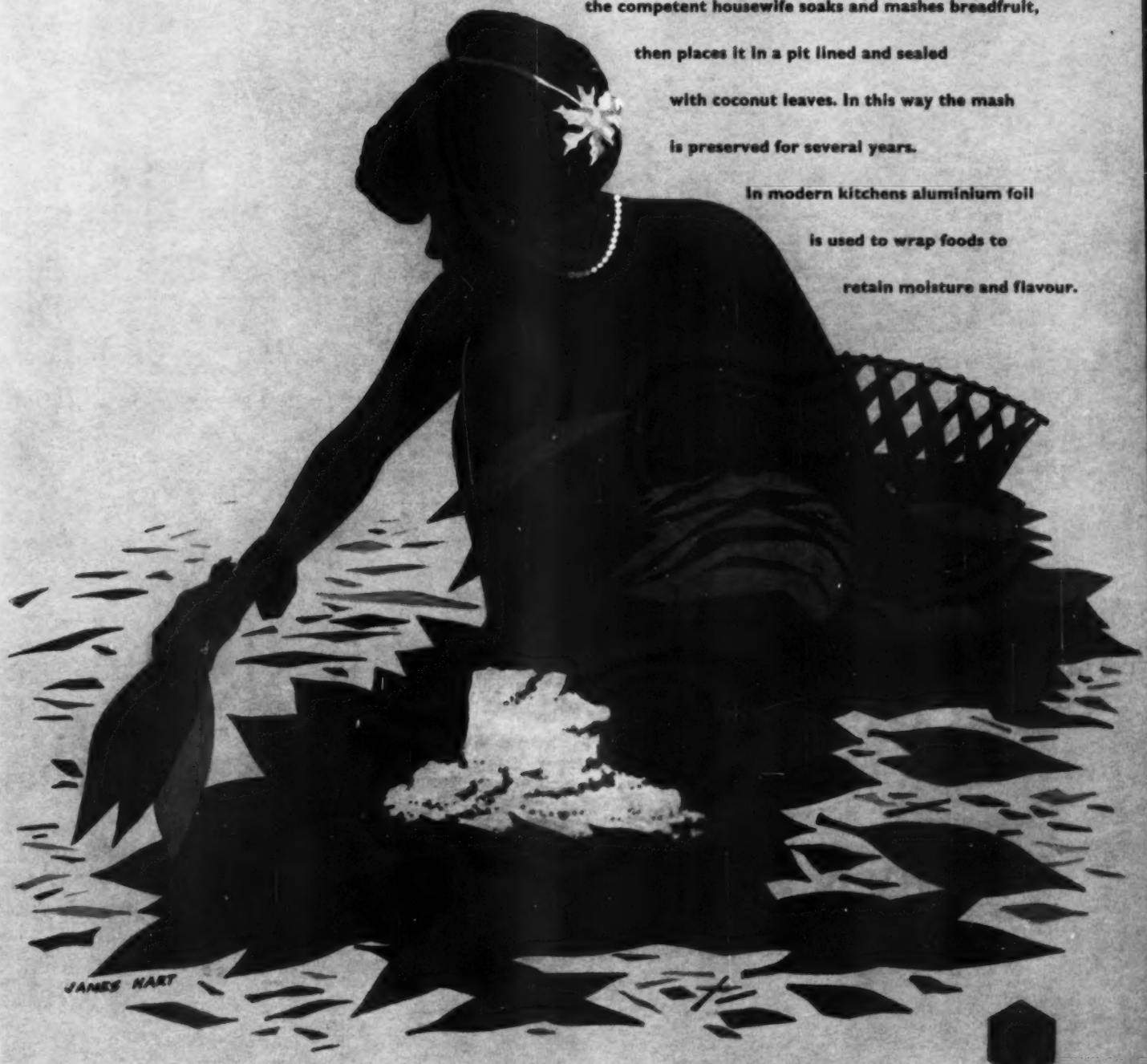

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